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STORM WATCHING.
A NEW LOOK AT WORLD WAR ONE

Coronel Nuno Correia Neves

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A NEW LOOK AT WORLD WAR ONE[1]

Autor
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IUM – Centro de Investigação e Desenvolvimento (CIDIUM)
Novembro 2017

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To Isabel, who has been keeping my wings strong for twenty six years.

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STORM WATCHING. A NEW LOOK AT WORLD WAR ONE

OBSERVANDO A TEMPESTADE. UM NOVO OLHAR SOBRE A PRIMEIRA GUERRA MUNDIAL

INTRODUCTION

This book was born out of confluence of three independent processes.

The first was the author's fascination with military history in general, that started at too early an age to be comfortably announced, and with the Great War in particular, in the latter case a direct result of the author's time as professor of military history at the now extinct "Escola Superior Politécnica do Exército" (ESPE), where the conflict of 1914-1918 proved to be an extremely useful tool for providing future officers with an understanding of war.

The second was the author's collaboration within the context of the celebration of the centenary of the war, through his participation in research projects and seminars organized by the Military University Institute. It was within this activity that the author wrote articles and made presentations that are included, in a revised and expanded form, in this book, and that provided the backbone upon which the rest of the book was built.

The third was the introduction in the Institute of the new field of research within Military Sciences called "Study of Crisis and Armed Conflict" that provided the point of view for the work presented in the book. This was, in fact, the "New" in the "A New look at World War One" subtitle.

All of this processes influenced this work so much that a brief explanation on each one is required for people who have not been involved in them. Those who were, such as the many more or less willing victims of the author's long conversations on the subject and the Institute teachers and students in the years 2014 to 2017, should feel free to skip this introduction and jump to the first chapter. Other readers might find the following pages useful before reading the book.

I
Confessions of a Storm Watcher

I have been obsessed with war since as long as I can remember. I collected books on military history from as early as I could read them, and memorized the relevant information on military leaders the way millennials memorized the characteristics of Pokémon's in their childhoods. In our vigilant times this would have probably have drawn the attention of a school psychologist, but in those days such weirdness was mostly expected to pass with growth without needing Freudian attention. It didn't, and led me to entering the military and pursuing a military career, during the course of which I was to find out that my passion for military history was far from being a common trait among fellow officers. Those that shared it, however, tended to gravitate, once they were senior enough, to the few vacancies in History related teaching positions, and formed a small had-hoc community, much as enthusiasts of unpopular sports tend to do. History as a subject is usually treated in military institutions as an isolated discipline, not directly connected to more "practical" subjects such as Operations and Logistics. This still prevailing tendency is aggravated by the Portuguese academic institutions refusal to include applied history in the "serious" study of history, unlike what happens, for example, in the United States, where historians are often brought in to governing bodies and command structures precisely to use applied history as part of the decision making process. This makes it more difficult to integrate history with other subjects.

When I was tasked with teaching military history to future officers at ESPE (The Dean, an old school infantry Colonel told me that my job to make sure that no student graduated without knowing who Ludendorff was) I took a rather unorthodox approach. The objective of the course was to teach them how to be officers, as far as that is possible, since many subscribe to the view that being an officer is not something that can be taught, but merely helped by some useful pointers in the relevant directions. I took the view that, since the officer corps in each army has a shared cultural outlook, the collective mind of the army could be analyzed much as the mind of an individual, and that to understand it a sort of collective psychanalyses could be attempted, in which the influence of major past experiences and their formative weight on the officer corps collective mind could be useful. Therefore, history could be used to show us why we think as we do, and strengthen our self-awareness. For example the traumatic experience of impotence against the first (Junot's) French invasion of Portugal in 1808, followed by the positive experience of

cooperating with the British in a combined Luso-British army can explain (or at least provide context to) the natural propensity of Portuguese officers to treat cooperation with allied countries positively at all levels. This process led me to regard the Great War as a major influence in the development of the modern military mind, and from then I devoted a greater percentage of my military history time to it, a process that manifested itself with a steady increase of the space reserved for it at my bookshelves.

In time I associated with an ad-hoc group of like-minded enthusiasts, a sort of military history "irregulars". We could tell one another by the obsession with technical detail (for us a given fighter aircraft was never just a Messerschmitt, it was a Bf 109F-4 or whatever exact version was relevant for the discussion) and we jumped from period to period with little regard for academic distinctions searching for a relevant example for the peculiar situation we were trying to find a way out of. Most of us never tried to get a proper History degree, feeling that it would box us in. If classical historians were the weathermen of the past, we were the fringe group that specialized in following storms, often too closely, as interested as they were in every minute detail of barometric pressure change and wind speed variations, but less interested in documenting individual losses and more focused in how to deal with next storm.

This "storm watching" outlook is where this book comes from. For anyone contemplating using it an element for their own studies, consider yourselves warned. Like Bettie Davis said (as Margot Channing) in "All about Eve", *fasten your seatbelts, it's gonna be a bumpy night.*

II
Meanwhile, back at the Institute…

The centenary of the war meant that there was official interest in all things related to the First World War, and critically also meant money was available for seminars, magazines and books. The Institute, then still called IESM, joined the fray and we organized a seminar in 2015 for which I was invited to submit a paper. That pushed me into completing a study I was conducting in an "on and off" manner for a while, on the importance of understanding the war within the cultural background and intellectual perceptions of the Generals that planned and lead it. This study had to be compressed into something that could be presented in twenty minutes. This compression meant that the work done for it allowed for considerable expan-

sion, and that work, once fully developed and free of presentation constrains, found its way into this book.

With the next seminar being planned for 2017, later to be moved to 2018, I was again invited to present a paper. Since the theme was to be the Atlantic, I started to work on the way North American policy had influenced the actions of Portugal during the war. I was at once confronted with the opposite of the problem I had faced while studying the military aspects of the conflict. Military history tends to work with the known facts, and in World War One that means almost everything since European state bureaucracies where operating at peak efficiency at the time and recorded nearly everything, and that makes it harder to understand the reasoning of military leaders who were working not with the facts, but with their perception of the facts. In diplomatic history, the main sources are the politicians themselves, either through the reading of diplomatic correspondence or of their recorded narratives of the events, which means that we tend to evaluate their performance against their perceived circumstances, rather than against the reality of the time.

This led me to try to understand what the people who made the critical decision regarding international politics before and during the war where not seeing, and that perspective opened the way for most of the work in the second part of this book.

Another element of my work at the institute that found its way into this book is my regular participation in discussions with the students of the Joint Staff Course regarding the origin of joint operations in debate sessions that are part of the course. This discussions usually take the lessons of World War One as a starting point, and have motivated me to study both the way different national military communities absorbed those lessons, but also in the way that influence has been systematically distorted to suit conventional narratives. This work formed a significant part of the chapter regarding the evolution of military thought as a consequence of the war, a chapter that, judging from the lively and interesting discussions at our debates here at the Institute, will probably be the most controversial of this book.

III
New skin for the old ceremony

The third main factor at the origin of this book was the introduction of the scientific area of "study of crisis and armed conflicts" within the recently established field of military science. This provides scientific framework to the

work already being done of using research tools from different established scientific areas, such as strategy, history or geopolitics, to study a given conflict in order to obtain lessons for the future conduct of new situations at the military or political level. This opened the door for a new approach to the study of past wars that merged traditional multidisciplinary study with applied history. This new approach aims more at being a tool for the development of current and future doctrine than to provide purely historical information.

Within this concept, this book will try to understand the conditions and factors that influenced the conflict, trying to "walk back the cat" of the leaders of the era decision making process, to understand how leadership processes a changing situation, and how the multiple factors along the chain of command can amplify or absorb mistakes. It is, for example, extremely relevant to evaluate just how objectively Ludendorff understood what he was really facing in 1918, not to understand why he lost, but to understand what an intelligent military mind operating under a false perception looks likes in action, so we can identify early synthons of a similar problem. The main novelty of this process it that it is centered neither in creating a portrait of the leaders (as in narrative history) nor in identifying the key factors of success, that are specific to the situation, but rather focus on the decision process and on the ability to narrow the gap between perception and reality.

We will then start with the military planning process, attempting to understand how socio cultural factors of the time framed military leaders thoughts, and then evaluate the problems of understanding the evolving reality of the war and turning that understanding into a valid operational concept, specifically focusing on how military staffs filter reality while trying to adapt to it, and on military political relations. We will then broaden our scope to present the major changing trends in the world during the war, to evaluate the different responses in terms of the evolution of military doctrine.

This book is written for people who already know the general history of the war. The causes of the war and the major military campaigns are so well know that I think it's fair to assume that any reader determined enough to find this volume will not be surprised when suddenly there is a revolution in Russia.

A final explanation has to be given. This book was written in Portugal by a Portuguese author. Writing it in English might appear an affectation, but isn't. A look at the bibliography will reveal that 80% of it is in English and the rest in French. Working with English sources, I use English as my primary language naturally. The Institute is bilingual, and we are celebrating a war in which Portuguese forces fought as part of a British led force. But the

decisive factor in the choice of language was the fact that this is primarily an eBook that will be available freely on the Web. The Web language is English. I think that the medium must shape the message, and regardless of how many people will ever click on the link to read this book, I think that if we put something on a worldwide platform, we should make it as worldwide accessible as possible. No language does that as well as English.

PART I
RETHINKING WARFARE

1. UNDERSTANDING THE GREAT WAR

> *"The gaze should be large and broad. This is the twofold gaze, perception and sight. Perception is strong and sight weak. In strategy it is important to see distant things as if they were close, and to take a distanced view of close things."*
>
> *Miyamoto Musashi*

One hundred years after it has been fought, the First World War has become a conflict that is easy to analyse, but difficult to understand.

One assumption is fundamental to understand the planning process at all levels: that plans are not based on reality, but on the perception that the planner has of reality. Our study of the Great War has been considerably affected by this phenomenon because, being a recent conflict between very well organized bureaucracies, the wealth of sources allows us, as historians, to deal with the objective reality of the facts, but the huge social and cultural development of the past century makes it extraordinarily difficult to assess the action of the main actors, personalities who, by all indicators, must be acknowledged as highly intelligent, but who paradoxically made choices that, in light of the facts, appear to us now to have been entirely wrong.

This does not happen in earlier conflicts, where, generally, our view of events stems from the subjective narratives of the participants, aligning us with the perceptions of leaders, or in more recent conflicts, where our intellectual and socio-cultural proximity to the decision-makers draws us into their viewpoint. Thus, we see Arsuf through the eyes of Richard I, whose point of view informs our perception of the battle, but do not see Verdun through the eyes of von Falkenhayn, since we construct a factual reality from the available data and wrongly assume he saw it as we do (Figure 1).

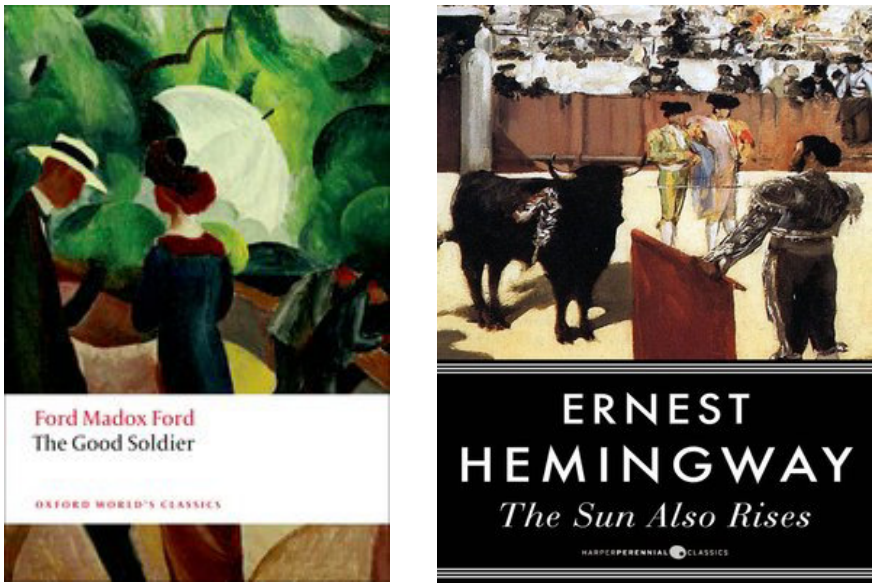

Figure 1 – The weight of social and cultural changes generated by World War One makes the cultural gap much wider than it would be if change happened at a constant rate. That is easily understood by comparing the literature of the pre and post war period. When we read Hemmingway's 1926 novel "The sun also rises" the characters are clearly people we can understand, while when we read Ford Madox Ford's 1915 "the Good Soldier" the characters seem to be from a remote era. In ten years, everything had changed. Ford Madox Ford was to chronicle that change in his master piece "parade's end".

Source: https://global.oup.com/academic/covers/pdp/9780199585946
https://img1.od-cdn.com/ImageType-400/0293-1/8FA/FC7/6F/%7B8FAFC76F-0E1F-46BC-BF33-FB65D1FCCB26%7DImg400.jpg

From a purely historical perspective this wouldn't be a major problem. Traditional history seeks facts, not conjecture. But history as part of military science is essentially a tool to understand, and hopefully perfect, the decision making process. Finding out why intelligent well informed people made mistakes becomes a priority.

Therefore, for those involved in a military science study of the conflict, the Great War must be looked at through the perceptions of decision-makers, even if that requires us to adjust our view of reality to something closer to theirs, so that we may understand their actions and draw relevant lessons from their actions.

Two perspectives will help us overcome this problem.

We have known since Sun Tzu that, in order to succeed, we must accept the gap between perception and reality, and conduct our actions, not purely against our opponent's reality, but against the perception our opponent has of reality. Thus, as historians, we must focus our study not only on the factual reality we can build with the mass of evidence we can access, but also on the perception that decision-makers in 1914/18 had of that reality.

We also know, thanks to Napoleon, that we are all creatures of our uniform, that is, of the social and cultural circumstances of our time. Therefore, it is in the culture of the time under study that we must seek the matrix to which we must align our perceptions (Figure 2).

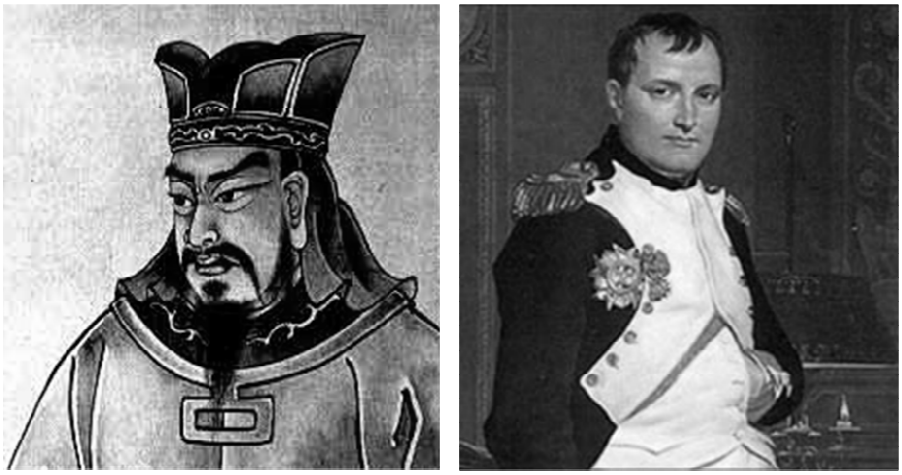

Figure 2 – Sun Tzu and Napoleon remind us of the importance of perception and context, providing us with two fundamental tools to understand the military decision making process in the Great War.

Source: http://www.abccopywriting.com/wp-content/uploads/2011/02/sun-tzu_0.jpg
https://i.pinimg.com/736x/02/e3/83/02e383acffdd5b31c683dd267d2dda67--napoleon-complex-french-revolution.jpg

The practical nature of our objective will also allow us to limit the scope of our research. Failures that are easily explained through basic incompetence give us little to learn from except the basic and universally accepted fact that incompetent commanders are dangerous and should be avoided at all cost. Therefore the obvious mistakes that doomed the initial Austro-Hungarian and Russian offensives are so basic that it would be more interesting to study the system that allowed such incapable officers to reach such high level positions than to study the mistakes they committed. That's

an extremely interesting question, but one that falls within another branch of the military science tree.

It is far more interesting to understand why competent generals leading good armies with good officers failed, and for that purpose we will attempt to understand the perspectives of the authors of two of the most universally criticised intellectual exercises that shaped the Great War, the Schlieffen Plan and Plan XVII.

There is a widespread, and false, misconception that these were bad plans that resulted from the military leadership's refusal to accept the progressive dominance of defensive firepower over manoeuvre in the technological context of 1914, which is said to have been anticipated solely by civilian analysts such as Jean de Bloch. Such an interpretation is reductive and implies a caricatural view of the involved General Staffs.

On the contrary, the military were perfectly aware of those conditions, not only through the distant example of the American Civil War, but from their extensive observations of the Russo-Japanese war, the Cuban war or the Boer war. The proof is in the heavy investment in machine guns and rapid fire artillery designed to sweep the battlefield with shrapnel ammunition, as well as in the excellent defensive employment of these weapons since the start of the conflict. Why would people who didn't believe in the capability of machine guns to provide effective firepower buy them in large numbers? If the French were ignorant of the devastating firepower of rapid fire guns on open ground why did they invest so heavily on 75mm Model 1897 guns and stocked shrapnel ammunition for them? This were, in fact, the very same officers that had made such devastating use of the new weapons against less advanced opponents in countless colonial wars or, in the case of the Russians, against an (arguably) more advanced opponent in the defence of Port Arthur. And that would, from the very beginning of the war, use this weapons on their defensive actions with a proficiency that demonstrates complete mastery. The answer must be found on understanding early XX century mentality. The issue was not one of ignoring reality, but of refusing to accept its limitations. The Generals of the pre-war period were not ignorant of the defensive potential of modern weapons (Figure 3). They were determined to overcome it.

To do so they devised plans that attempted to avoid frontal attacks against established positions, in the German case by outflanking the main enemy force, in the French case by launching the decisive attack against a perceived weak spot and against what they expected to be the exposed flank of a moving enemy force. And in all cases the plans sought rapid decisive results to avoid the possibility of a long attrition war, even if that meant accepting high risks.

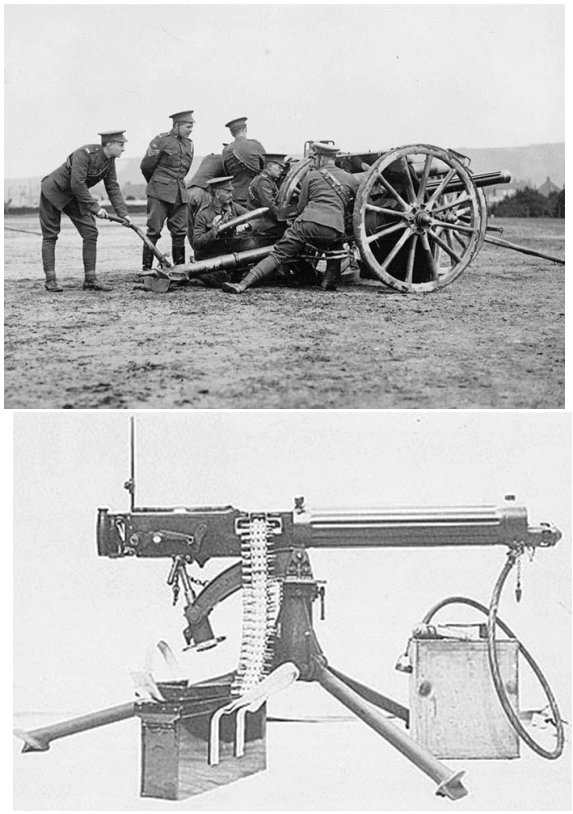

Figure 3 - Rapid-fire light artillery and machine guns were at the centre of all armament plans before the war and of the early defensive success.
Source: https://i.pinimg.com/736x/87/66/eb/8766ebf7e4198a326d2d8176480c5f55----british-army.jpg
https://www.flamesofwar.com/Portals/0/all_images/weapons/Empire-Vickers-HMG.jpg

The late nineteenth century/early twentieth century was a period of affirmation of human genius over natural and material limitations. The perfect expression of this spirit was the maxim by George Bernard Shaw: '*The reasonable man adapts himself to the world; the unreasonable one persists in trying to adapt the world to himself. Therefore, all progress depends on the unreasonable man*'. This was the age of unreasonable men conquering the world.

The attitude of military leaders of looking beyond the limits of what was reasonable to achieve a quick victory in spite of constraints is a manifestation of the spirit of their time. If we take historic context into consideration, we cannot fail to notice that the Schlieffen plan went from initial design to practical

application exactly during the period of time in which the Panama Canal was built, and that the German General approved the concept exactly the same year that Albert Einstein published the first version of the theory of relativity.

The problem facing the two growing empires, the German and the North American had similarities. They both had to be deal with the possibility of a two front war, in the German case on land in East and West, in the USA case on sea in the Atlantic and the Pacific. The problem was basically the same, either build forces so large that they can engage on both fronts and win, or find a way to be able to operate in both fronts.

In terms of national aims and geopolitical ambition, the Schlieffen plan was the answer of the German Empire to its war on two front problem; much like the Panama Canal was the answer of the United States to the need to operate in two oceans. In both cases it was a massive national effort to change the world, and in both cases the solution solved the problem by exploiting the relations between force and time. The German solution meant building an extensive intellectual and material network that combined an entire Army organised around a single idea (leading to specifically tailored mobilization measures and training programs) with a logistic structure that allowed it to move with the required speed and that involved a comprehensively tailored development of the entire German rail network).

The chronology of both enterprises is impressively synchronized, the Plan being adopted in the same year that the United States started on the Panama Canal Project and the Plan become an operational reality within months of the Canal. Both enterprises share the same “world shaping” level of ambition and are comparable both in the magnitude of the effort, and in their purpose of facilitating their nation emergence as the world leading power. In the present day only China seems to still think in this terms, the three gorges dam being an early example and the “belt and road” and Nicaragua canal projects being their current "Schlieffen" plans (Figure 4).

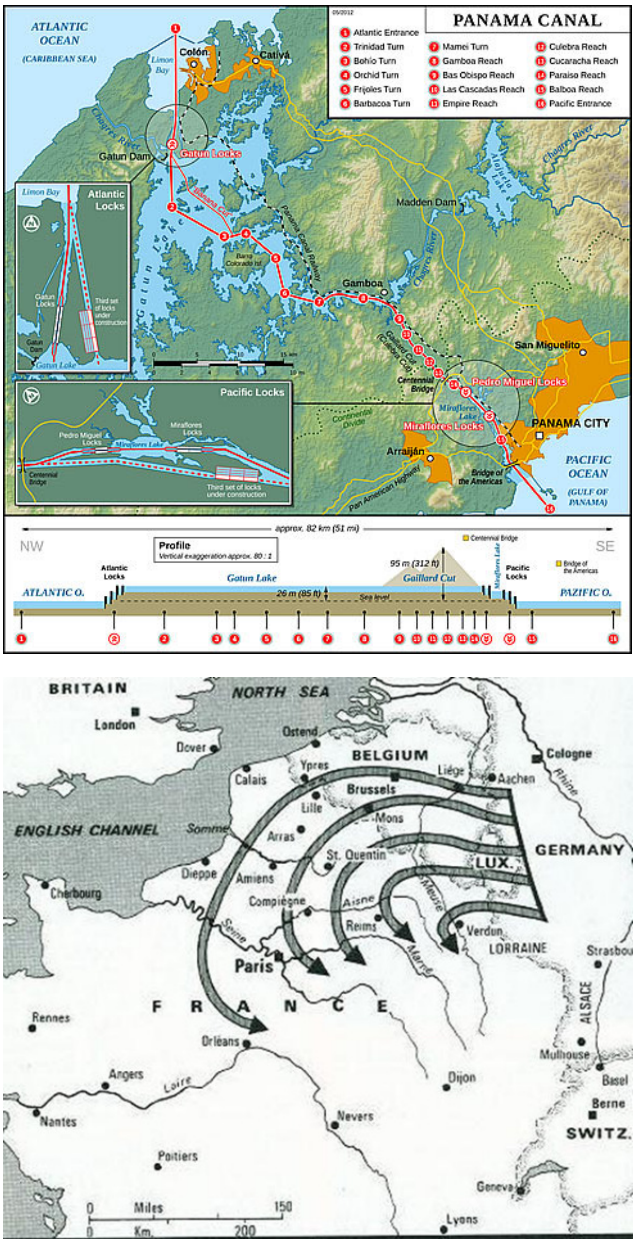

Figure 4 - The Schlieffen plan and the Panama Canal were two precisely contemporary national responses based on the refusal to submit to geopolitical constraints and on the determination to employ massive efforts to overcome those constraints.

Source: http://www.dhahranbritish.com/history/images/schlieffenplan.jpg
http://www.nationsonline.org/gallery/Panama/Panama_Canal_Map_EN.jpg

But if the Panama Canal makes an adequate comparison with the Schlieffen Plan in terms of magnitude and motivation, the theory of relativity is interestingly comparable to it as an intellectual exercise. Again the similarity of the timelines is almost total. Einstein published the first version of his ambitious theory at the same year that the Count promulgated his Plan, and the final complete version of Einstein's work was published in definitive book form within months of the implementation of the Plan. But what strikes us most when comparing them is that, as a deceptively simple corollary to a huge intellectual edifice, 'keep the right wing strong' is the strategic equivalent of '$E=mc^2$' in all its complex simplicity. In both cases a very complex problem had been brought to a simple formulation that changed everything it was applied to within its domain, being in both cases manifestation of the spirit of an era in search of inclusive responses, above all else.

Schlieffen was therefore thinking as a man of his time, and it's not surprising that his predecessor, the elder Moltke, a man of a very different era in which men were expected to adapt to reality rather than shape it, had advocated a more defensive and less risky concept (Figure 5). Had the Plan succeed, and had it been attempted at a more favourable time, such as in the Morocco crises of 1911, and with a more capable Commander in Chief than the younger Moltke and it just might have, and Schlieffen would be as highly regarded among generals as Einstein is among Scientists (and this book would probably be written in German rather than English). In reality, the top military leaders of the time did not see themselves as technicians or as specialists only, but as thinkers operating on the same intellectual level as their peers in the sciences or the arts.

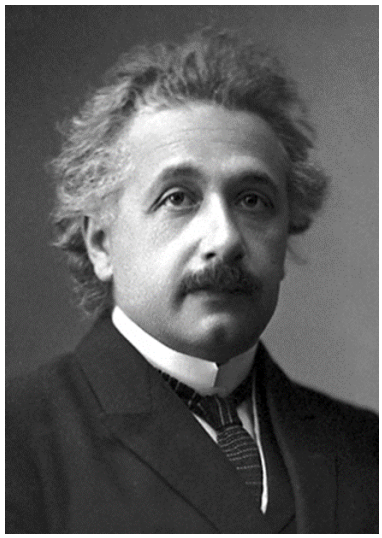

Figure 5 - Schlieffen and Einstein main intellectual works were developed in the same period and had in common their quest for a simple and inclusive formula to explain a complex problem.

Source: https://weaponsandwarfare.files.wordpress.com/2015/08/26404-004-a368b9ff.jpg?w=240
https://upload.wikimedia.org/wikipedia/commons/thumb/5/50/Albert_Einstein_%28Nobel%29.png/215px-Albert_Einstein_%28Nobel%29.png

Schlieffen, like most major military leaders of his age, had a vision of his job that exceeded the currently narrower "persona" assumed by even top generals that see themselves as technocrats trying to fulfil their political leader's objectives. The Count probably saw himself as being on the same level as the leading brains of the age, as the Darwin of strategy or the Hegel of war planning. He faced two vast problems, both of them very Prussian in their circumstances. The first was how to win a war in two fronts, a problem that he expected to surpass by turning it into two single front wars fought in very short succession. The other was how, in the face of a devastating attritional machine, to achieve victory through manoeuvre while wasting neither excessive time nor excessive lives, both a requisite of the two wars in short succession formula. To do so, he found inspiration in a twenty two centuries old battle, Hannibal's great victory at Cannae (Figure 6).

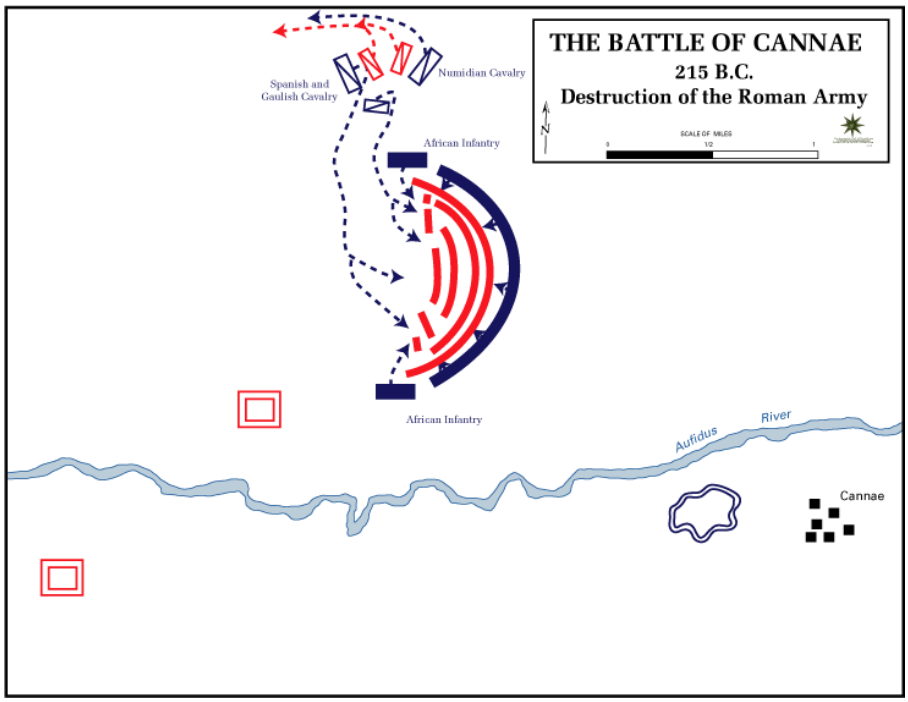

Figure 6 - The Battle of Cannae was used by Schlieffen as an inspiration and as a teaching aid. His book on the battle was to have a heavy influence on at least two generations of German Staff Officers and on two World Wars. When Moltke made the fatal decision of committing to a two pronged offensive he was probably thinking within the terms of the default German military ambition taat Rommel would later call "a new style Cannae" Had he opted to seize a less decisive victory than risking pursuing an even more decisive one than the original plan envisioned, he might have secured a safe position from which to negotiate a favourable peace. The military perception of history matters.
Source: https://en.wikipedia.org/wiki/Battle_of_Cannae#/media/File:Battle_cannae_destruction.png

It made sense. The Roman army was the first unashamedly attritional machine in the history of war. Unlike other apparently similar ancient fighting systems, such as the Greek phalanx, that had been conceived to win battles by shock with minimal casualties on the winning side, Roman Legions fought by forcing their opponents into a vast number of simultaneous knife fights, each legionnaire seeking a victim and moving on, or not, to next one. The Romans fought to kill and main large numbers of their enemies, not while they run away, but while in contact, relying on their superior training to achieve a favourable kill ratio, and on their vast manpower resources if the opponent fought well enough to counter that logic. Schlieffen appears to have understood implicitly that what was at issue at Cannae was a General

defeating attrition by boxing his opponents into a killing cage built with manoeuvre. He turned that concept into a whole philosophy of war, using his widely read book on Cannae as a de facto manual, in an extreme case of military history being used as a teaching tool. His plan was to box the French Army by a wide flanking movement that would also avoid Hannibal's mistake of failing to take Rome by allowing for a quick capture of Paris. He was obviously aware that victory at Cannae had failed to provide a Carthaginian victory at the long war, but he knew that, unlike Hannibal he had superior numbers and planned to remove the enemies' power base from the fight early on. The plan was extremely bold, very simple in concept but very complex in execution, and overlooked the fact that Cannae was an historical oddity, a onetime miracle pulled by a onetime genius against a mediocre opposing general. There would be no new Cannae without a new Hannibal, and the younger Moltke was certainly no Hannibal, nor was Joffre a Varro.

If the German plan scale and ambitions was in tune with the great political and scientific leitmotivs of its time, in in their total adherence to a central idea, the obsession of the French strategists with the offensive spirit, the 'elan' that would lead them to victory, can only be understood on the same level as, for example, the obsession of the contemporary Futurist movement with speed, typical of the intellectual movements of the time, which were always driven by a key idea or principle (Figure 7). This was, of course, far from being a specifically French obsession. All the armies of the pre-war period placed their doctrinaire emphasis on the offensive, even though their tactical manuals, including the French ones, were rather more cautious. The enthusiastic way in which officers commanding units of all sizes in all armies charged defensive positions in the first battles of the war can only be explained as cultural phenomenon, and the excessive risks they took reflect, at a lower level, the risk being taken by the national general staffs at the strategic level. The offensive was the military default mode in 1914, and social cultural conditioning proved more powerful than tactical doctrine and even common sense.

Once we consider the weight that prevailing cultural trends had in shaping military minds in the period, the best term to describe the first months of the war would be **Zeitgeist Krieg**.

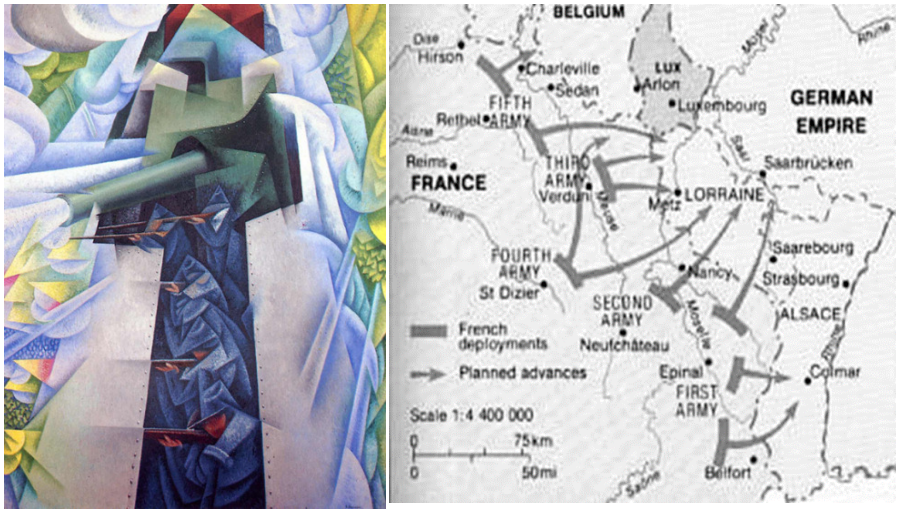

Figure 7 - The Plan XVII military leaders and the artists of the Futurist movement had in common the subordination of a complete intellectual construction to a key idea, the military communities being as sensible to intellectual fashion as the artistic ones.
Source: http://www.worldwar1.com/maps/xviiplan.jpg
http://artsdot.com/Art.nsf/O/8XY4RJ/$File/Gino-Severini-Armored-Train-in-Action.JPG

Often vilified by people who haven't really studied it, Plan XVII was actually very similar to the 1940 German Plan Yellow, usually presented (including by himself) as von Manstein's master piece. Both can be resumed in the same short paragraph. *Launch a secondary, but strong, attack. When the bulk of your enemy forces move into Belgium, strike across the Ardennes and cut them off from their lines of communication. Once enemy forces in Belgium are defeated, attack all along the line to complete the victory*. The reason why we think of plan XVII as stupid and Plan Yellow as genial is that the Germans won, not due to inherent merits of their plan, but due to an appalling performance from the Allied High Command in 1940.

Thus, these military plans, in their apparent unreasonableness, answer to factors which are more than just technical, but are rather the cultural constraints of the early twentieth century. Like Gloria Swanson's character in Sunset Boulevard would say, if these plans seem megalomaniac today it is only because the wars have gotten small.

How was it then possible that what was probably the most intellectually gifted and ambitious military generation had failed so clearly in their attempt to avoid defensive stagnation?

Asian artisans believe the gods live in the details. For Western strategists, demons lurk in the assumptions. In both cases, the plans failed because

of wrong assumptions which resulted from an erroneous perception of the opponent's capabilities. Thus, the Germans failed because they underestimated the resilience and flexibility of the French, and the French failed in the same manner because they underestimated the German capacity for organization and mobilization.

The failure of the Schlieffen Plan has been more exhaustibly explained, and anyone who has read even a non-military account such as "the Guns of August" will be familiar with it. The Germans had expected the French to be overwhelmed and not to be able to maintain cohesion and synchronism in their action. Both predictions failed. The French Fifth Army wasn't overwhelmed but just pushed back, and the German advancing Armies were unable to coordinate their actions, allowing for opportunities for a French counter attack. The French, outperforming their predecessors of 1870 by a large margin and sacking incompetent or underperforming commanders mercilessly, were able to exploit interior lines of communication and their Fifth Army excellent defensive performance to take advantage of the excessive rigidity of the German High Command. Moltke then lost his opportunity to secure a more limited victory when he failed to understand the need to concentrate on destroying the Fifth Army and seizing the channel ports rather than chasing a mega Cannae after it was no longer possible.

The reasons for French failure are less commonly understood. The French had based their estimates of initial German strength on the assumption that reserve units would not be fully deployed. This resulted on a serious underestimation of German forces, that in turn led the French to believe that the expected attack by the German right wing would happen on a shorter arch than in reality, and that both the German fourth and fifth armies in the centre, and sixth and seventh on the left wing would be weaker than they actually were. Had the estimates been right, the expected outcome would be for the French first and second armies to secure (at least partially) Alsace and Lorraine, while the third and fourth armies would overcome the German centre and isolate the main German force. At this point, if things had gone according to the plan, Russian pressure combined with the disadvantageous situation on the western front would bring Germany to a negotiated solution, in which the fact that Alsace and Lorraine were in French hands would make it easier to get them back. Had the French High Command been provided with decent intelligence estimates, they would certainly have altered their plan significantly. They weren't, and they are generally condemned by armchair commanders for not having adopted a defensive posture, despite the

fact that the same armchair commanders criticize World War Two Allied commanders for the opposite motive.

In fact the French third and fourth Armies charged into an expected weak spot that simply didn't exist, running into a German force that actually outnumbered them. This had a terrible cost both in casualties (critically in massive and extremely hard to replace losses in trained junior officers) and in the loss of critical economical resources that were left in German hands. Germany was left in control of the Belgian coal mines and French coal mines in the north of France and critically of the Briey mining area, then the world's second largest iron mining complex. This provided Germany with iron it could no longer import, sustaining its war industries, and meant that French industry had to import steel and equipment, putting additional stress on the national debt, with consequences we will discuss in part two of this book. This is one of the reasons why the French adopted such a conservative defensive policy in the inter war period, being aware of the need to protect one's economic base at the start of a long war The long war that the planners had hoped to avoid become inevitable after a last German attack in Ypres failed its aim of breaking through towards the Channel ports and cutting off the allied northern flank (in another anticipation of the 1940 Plan Yellow).

This initial failure caused the war in the western front to turn into a conflict of attrition, as Lord Kitchener stated in the early days of the war, Joffre after the Marne and von Falkenhayn after the failure of his Ypres offensive. In the case of the Entente nations, this early understanding of the true nature of the war allowed for long term planning, the British setting in motion an effort to expand dramatically the size of their armed forces, not in months but in years, while Joffre imposed from an early moment a focus on the progressive erosion of the German Army as the key to the allied strategy.

Given the situation after the initial battles Kitchener's assumption of allied victory in three years seems generally correct. Initial battles had shown that the Russians wouldn't be able to overcome the Germans, but their performance against the Austro-Hungarian Empire indicated that Austria-Hungary could be expected to be worn down. It was also expected that under an effective blockade the German Empire would be incapable of winning a war on two fronts, and would be progressively but inexorably worn down. What derailed this plan was the expansion of war into the Ottoman Empire, mostly driven by Churchill's propensity for risk taking and imperial obsession. The Ottomans entry into the war made cooperation between France and England with their Russian (and Serbian) allies extremely difficult and considerably negated the advantages of fighting on two fronts.

On the German side von Falkenhayn tried to persuade his government of the need to accept a favourable peace while it was still possible, and having failed at that setting in motion a plan B of managing attrition at a favourable rate that would possibly mill away the allied advantage in resources (Figure 8).

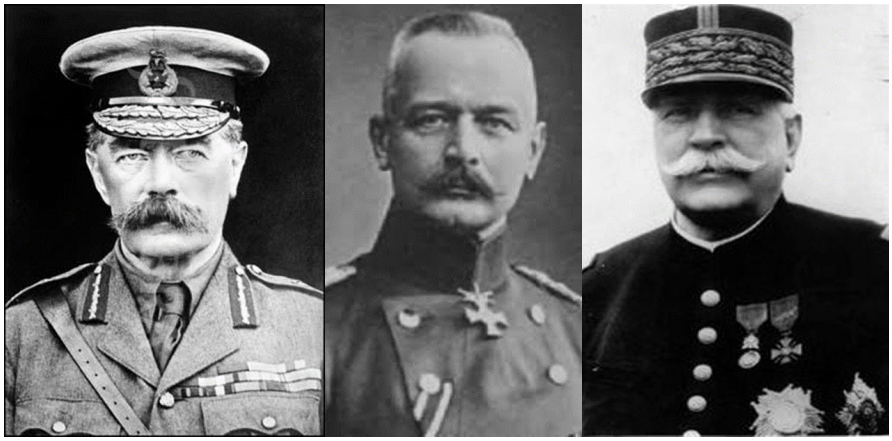

Figure 8 - Kitchener, Joffre and von Falkenhayn are proof that (some) decision makers were capable of understanding the evolution of operational realities at the early stages of the war.
Source: https://upload.wikimedia.org/wikipedia/commons/9/94/Joseph_Joffre.jpg
http://i.dailymail.co.uk/i/pix/2016/06/22/11/358AEAE800000578-3654119-image-a-46_1466591060900.jpg
https://i.pinimg.com/originals/46/83/6e/46836ec06bdf291b3f17c88b28f7d43f.jpg

And if Kitchener was able to predict the nature, and even the duration of the war in its early days, it was because the attrition characteristics of the Western Front were not derived from the trenches alone, but were essentially caused by opponents who were well balanced both in resources and capabilities. This is another of the often misunderstood lessons of the war. The general belief that the stabilization of the front had been the direct consequence of an unrepeatable moment in technological evolution in which the means of the defensive were much superior to those of the offensive, blinds us to the realization that all wars, regarding of technology, turn into stalemate when the opponents are perfectly balanced. What held the lines in place in 1915/1918 was not just the effectiveness of the machine guns and the strength of the defensive works, but the perfect balance between the capabilities of both sides. If we study the major battles on the Western front, the lack of the overwhelming local superiority needed to achieve a decisive breakthrough becomes obvious, and the effects of that equilibrium are seen in the initial battles, were determinate attackers were stopped, not by an abundance

of trenches or barbed wire, but by the presence of a defending force that nearly matched them in numbers and that equalled them in capabilities.

This equilibrium was reinforced by the asymmetrical nature of mobility in the front. Behind the front movements were essentially made by train, and eventually, and mostly on the allied side, by motorized trucks (Figure 9). This meant that it was possible to move forces at thirty to forty Km/h out of the battle-field, but once forces entered the battle area they had to move on foot, usually on rough ground, reducing the speed to a tenth of that. Even though both sides tried to overcome this by rapidly building tactical rail lines on conquered ground, this was mostly done to ensure the flow of supplies. The defender could, therefore, reinforce a threatened area a lot faster than the attacker could push forces forward, meaning that as long as the defending side had reserves, all breaches in the forward lines could be plugged faster than they could be expanded. The war could only be won when one side run out of reserves[2]. This was understood very early by the three above mentioned Generals (and others) but never seems to have been fully understood by Ludendorff, whose 1918 offensives were planned in a clear state of denial regarding this reality, even though the American Civil War had clearly demonstrated this situation.

Figure 9 – The possibility to move reserves rapidly by railway is the main factor that made wars between well balanced opponents increasingly attritional since the mid XIX century.
Source: https://rslvwm.s3.amazonaws.com/I/images/8667/photo/zoom_full_Troop-train-2_1_.jpg

[2] This could be achieved through purely military means or by causing the collapse of the opponent's political order, therefore destroying its ability to sustain the necessary forces.

Once this state of affairs had been achieved, the peculiar characteristics of the First World War on the Western Front allowed the Germans take a defensive stance in terrain of their choosing, forcing the Allies to create attrition through offensive action. Casualties were, therefore, no longer a means to achieve an objective, but became a goal themselves, in an inversion of the traditional military rationale. Overcoming this situation would require answers on two levels, the material and the intellectual.

The answer to the material issues came swiftly through advancements in technology and the subsequent development of tactics. In two years, artillery evolved from what was essentially an infantry mowing machine into a landscaping tool. In one year, Renault had invented the modern tank[3], producing about 3000 the following year. In two years, aircraft evolved from toys to true combat machines (Figure 10). The speed of technical progress in weapons design in 1915/1918 was never to be repeated again, even in Second World War. The Spitfire, having incorporated more powerful engines and guns, fought competitively from 1939 to 1945. In the Great War the Fokker Eindecker fighter aircraft went from being the best in the world to complete obsolescence in just one year.

[3] The British "rhomboid" tanks were a needlessly complex specialized tool that become obsolete as soon as the war was over. The much simpler, cheaper and reliable Renault FT set the pattern for tanks everywhere, engine at the back, driver at the front, a rotating turret in the middle. The FT was clearly something created by the automotive industry, while the British tanks were the product of the naval industry.

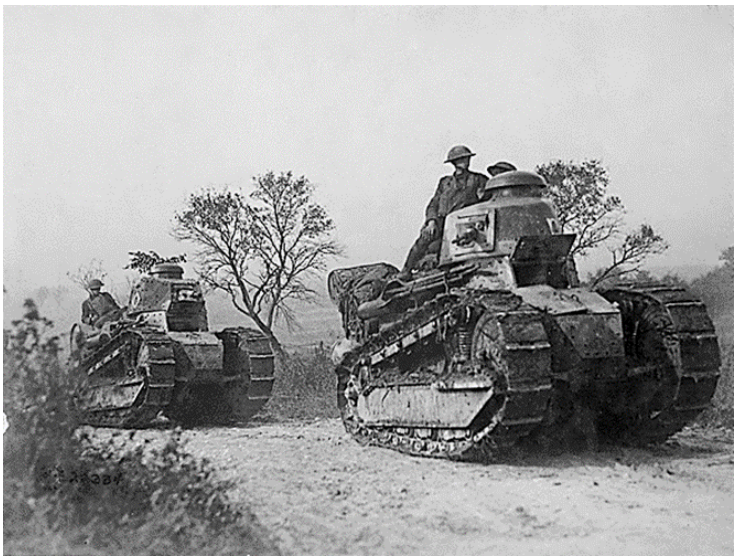

Figure 10 – Going from initial concept to mass production in just one year, and being produced in massive numbers in just one more year, the Renault FT-17 tank is a symbol of the extraordinary technological response to the problems of the Great War. Renault got the essentials of tank design right on their first try.
Source: https://upload.wikimedia.org/wikipedia/commons/e/e3/American_troops_going_forward_to_the_battle_line_in_the_Forest_of_Argonne._France%2C_September_26%2C_1918._-_NARA_-_530748.jpg

But technology can only break deadlocks if it is asymmetrical. For most of the war both sides were capable of matching the developments of the other, artillery capabilities growing evenly on both sides, and qualitative advantage in aircraft changing frequently enough as new models were introduced to prevent more than temporary dominance by one side. The introduction of chemical weapons rapidly advanced to the symmetrical pattern, preventing it from becoming decisive. The one area in which the Allies made a difference was the automotive industry, large fleets of allied trucks giving their armies far superior mobility and critically large numbers of tanks (Figure 11). The allied armies had thousands of tanks in 1918, and the Germans had only built twenty very impractical A7V heavy tanks.

Figure 11 – The contrast between the model 1897 75mm field guns that were so effective at the start of the war in their lethal use of shrapnel ammunition (in practice turning them into long range shotguns) and the massive 305mm howitzers of the closing stages of the war shows how much weapons evolved during the war.
Source: https://www.militaryfactory.com/armor/artillery.asp

The main problem was intellectual and was caused by a generation of officers, who had devoted their entire lives to the cult of manoeuvre as the superior form of war, being required to absorb the realities of a war of attrition and to create the mechanisms to conduct that war.

This problem of perception of the conflict manifested in four core areas:

– Political-military relations
– The conceptualisation of the war
– The planning and conduct of operations by the different echelons
– The evaluation of results.

Political-military relations

In the field of political-military relations, attrition is a concept that cannot be politically accepted. If the problem was not initially felt so keenly in Russia and the Central Powers[4], where the war created an overlap of political and military power, in the powers that remained democratic during the war, a problem arose when defining the objectives of operations. Simply stating that an offensive that will cost heavy casualties will be launched in the mere hope that it will cause heavier casualties on the opponent requires a directness only dared by von Falkenhayn (And mostly expressed after the war). If, for the French, the clear separation of spheres of competence between the political and the military levels allowed the High Command to accept politically defined general goals without specific military objectives, and consequently to conduct operations according to purely military (and attrition-based) concepts, in the United Kingdom, the influence of political decision-makers would strongly condition the planning of operations. The conduct of the war was discussed on the parliament, and it was simply impossible to defend that the main purpose of an offensive that had cost hundreds of thousands of casualties was to cause a slightly higher number of enemy casualties. In a society with a tradition of transparency and political control over military operations, Haig was forced to plan offensives with decisive objectives and could not take a stance of pure attrition, which hampered his success in that area.

Thus, while both Allied Armies were told the Somme offensive was part of a group of offensives to break enemy lines (the others would take place in the Russian and Italian fronts) that would put a successful end to the war, the French treated their major offensive component essentially as an action of attrition, which had limited success in that regard[5], while the British expanded and modified their initial realistic plans and attempted to present a plan that could achieve a decisive and politically desirable victory, thus compromising the achievement of their attrition objectives.

The British plan was therefore expanded to include a massive breakthrough that would allow for the exploitation of success by cavalry units on the German rear, and the whole offensive cycle was prolonged in the quest

[4] Until it reached the point where it brought down the whole foundations of the state.
[5] It is now often claimed that the success of the French attritional offensive was hampered by the scaling down of its dimension as a consequence of the battle of Verdun.

for an impossible deep penetration of the German defences instead of being managed in order to maximize German casualties.

The process was repeated in 1917, when Haig was forced to launch an offensive to wear down the German Army and relieve the pressure on the allies, and, in order to recover the government's fragile confidence in his leadership, had to define a politically acceptable objective. This eventually become the capture of the German submarine bases of operations in the Flanders coast; leading him to attack a sector that was ill-suited to attrition operations and to excessively prolonged operations. It is particularly interesting to contrast the success of offensives with limited objectives (Messines and Vimy) with the failure of the major offensive (Ypres). Messines clearly shows that the British fully dominated the conduct of attrition warfare, and the unrealistic objectives for Ypres illustrate the political constraints on their perception of the conduct of the war.

In an interesting example of the same problem, the German high command, usually not partial to parliamentary control mechanisms, formed an unlikely alliance with the parliament to enforce a policy of unrestricted submarine warfare. Elevated to the political level, this military concept was presented as the key to a quick and decisive victory, in this case being a military response to an eminent political crisis, generating great excitement in public opinion, and inevitable disappointment when it failed to live up to expectations, in a clear example of how difficult it was to adjust the duration of a conflict of attrition to the political debate and to social realities. At the time there was an imminent threat of the Austro-Hungarian government being overthrown and a serious threat that the same could happen in the German Empire, meaning that Ludendorff had to come up with a military option that promised victory, even if it was unrealistic (the Navy simply didn't have enough submarines[6]) and had an unacceptable cost since it was sure to bring the United States into the war. If hindsight allowed Ludendorff to justify the risk with the need to win the war in 1918 by using forces moved from

[6] Admiral von Holzendorff assumption that submarines would defeat Britain in five month was based on four wrong assumptions. He estimated that sinking 3.000.000tons of ships would isolate Britain, when the combined action of mines and submarines sunk 3.844.000 tons in that period and failed to do so, he didn't anticipated the effects of the USA entering the war and he expected neutral ships to stop operating for fear of being sunk when they kept on sailing despite the risks, and finally he failed to anticipate the reduced efficiency of submarine attack when the allies adopted the convoy system in May (the German Navy didn't introduce wolf pack tactics in World War One and was less effective against the convoys).

the Eastern Front, the fact was that at the time the Germans were debating the start of unrestricted submarine warfare (December 1916/January 1917) nobody in Germany could predict the revolution in Russia (which started in march 8th, the Russian use of the old Julian calendar ensuring that it would be confusingly known as the February revolution), let alone the November one (again to be forever known as the October revolution for the same reason) that would take Russia out of the war[7]. The problem for Ludendorff was that the only rational alternative was for delaying defeat, a defensive strategy that generated a favourable kill ratio on all fronts, and that was politically unacceptable leaving him with only the options of having to admit that war wasn't winnable or accept less than rational options.

The conceptualisation of the war

The main difficulty for military policy-makers in conceptualizing the conduct of the great war was to break free from their training, which upheld the primacy of manoeuvre and of the offensive spirit, and, generally speaking, to abandon Napoleon and return to Vauban. Attritional warfare seemed in fact to be a return to the age of Luis XIV, when battles consisted mostly of murderous linear exchanges of musket volleys or protracted sieges, battles were rarely decisive and wars ended when one side run out of money or men. This was regarded as a primitive, inferior form of warfare, made obsolete by the genius of Frederick the Great and Napoleon. It was like asking a painter to go back to medieval style as if the renaissance masters had never existed[8]. In the study of military history generals who won wars through attrition, like Ulysses S. Grant, were tolerated but not admired, while those who won by manoeuvre were revered. And there was also the tremendous psychological cost of accepting the own casualties required even in a successful attritional battle, often made even heavier by the fact that at a time when military families were the norm, many commanders lost sons in battles they planned.

In this instance, the German devotion to manoeuvre and decisive battle meant that there was a particularly strong resistance to attrition, which led strength to those who were plotting for von Falkenhayn's dismissal, his

[7] A fact that seems to have escaped the late, great John Keagan, who remarked that Haig forgot that the Germans had a reserve army in the eastern front, when even the Ypres offensive was set motion before the Bolshevik revolution.

[8] Not a random example, actually that is the whole basis of the pre-Raphaelite school.

position becoming more fragile as soon as he imposed an operational concept based on attrition for his Verdun offensive. Falkenhayn in fact no longer regarded outright victory as possible. Having tried to persuade the Kaiser to sue for peace, and failed, he now aimed at persuading the French that victory would also be impossible for them[9], or at least that it would came at such a high price that they would sue for peace if offered reasonable terms. No political gains could be won by such a strategy, at best a return to the previous status quo could be achieved[10]. While for Haig to assume attrition as a goal on itself was politically risky, for a German general to think in such terms was almost heretical. Verdun was arguably the most extreme case of a battle being fought in purely attritional terms, partly because von Falkenhayn had no qualms in openly presenting it as such. The way it in which it was presented revels, once again, the traditional German excessive faith in the decisive battle concept. The idea that the war could only be won by attrition was correct, but the idea that in such a war a single battle, no matter how big, could prove decisive was of course false, a war of attrition being always won by cumulative effort in a series of battles. Falkenhayn, having alone in the German High Command understood the real nature of the war, was therefore trying to compress it in a classically German manner, remaining, as Napoleon would have said, a creature of his uniform. His rivals in the German General Staff could, to make matters worse, point out that they were, moreover, waging a war of manoeuvre on the Eastern front, which reinforced the apparent relevance of a classic model of war. Once the Hindenburg/Ludendorff duo took over normalcy was restored in the OHL (Oberste Heeresleitung or Supreme Army Command) and the offensives of 1918 were later to be a desperate attempt to enforce a model based on manoeuvre, which inevitably proved disastrous from the point of view of attrition. Ludendorff rejected the plan proposed by the Staff of Crown prince Rupprecht of attacking in the Armentiéres/La Bassée area to strike towards the Channel cost to isolate the British forces in the North (essentially a repeat of von Falkenhayn Ypres offensive. The offensive therefore lacked any clear strategic aim).In the end, the 1918 offensives costed the German Army 863.000 casualties against 690.000 allied

[9] Much as Haig could not predict the Russian collapse when he planned his Ypres offensive, Falkenhayn could not predict that the US would enter the war and therefore he overestimated the long term impact of French casualties on their political resolve.

[10] In fact, as we shall see later, the German General's notion of an "endgame" for the war was very close to the vision of the US President. Like his predecessors, the German General underestimated the resilience of the French Army that he regarded as having been worn out by the losses in 1914 and 1915.

casualties. They also cost the Germans the advantage of fighting in prepared positions on advantageous ground and the proximity to their logistic bases, leaving them in exposed salient to face the allied counter offensives. The Allied high command in fact managed the offensives extremely well, giving up ground it didn't need by defending fiercely enough to maintain a favourable kill ratio without ever allowing the Germans a clean breakthrough or the conquest of a valuable position, the skilled way in which Amiens was held being a particularly strong example

The mental effort required for the transition was quite considerable. Some authors maintain that there are manoeuvre generals and attrition generals since the required mind-set is too different for the same person to be both. Some of the best generals of the Great War, like Foch just to go for an obvious example, seem to prove the contrary. But there are different qualities and attitudes required for each. An attrition battle must be not only carefully planned, but methodically managed, each single action cautiously evaluated in terms of gains and losses, each effort sustained to the exact point when it stops providing an advantage. The conduct of war must no longer be regarded as an art, becoming almost purely scientific, and all rewards become distant and on only relevant in the long term, the psychological relief of even small victories being denied.

The planning and conduct of operations by the different echelons

The constraints intrinsic to conflicts of this type proved to be even greater when it came to the planning and conduct of operations by the various echelons. In reality, in conflicts of attrition it is extremely difficult to find objectives that may lead to offensive operations which are advantageous in terms of attacker/defender casualties and which can be put into practice as a planning basis for units on the ground. The defender has, in fact all the advantages, losses among the defenders in battle being traditionally inflicted after the lines are breached, when they surrender or while they are retreating. This could not be the goal in an offensive in the Western front. Since a decisive breakthrough could not be expected, there would be no retreat, and the defenders were not expected to surrender in relevant numbers, at least until the final battles of 1918 when German soldiers began surrendering in a large scale.

It was therefore necessary to maximize vulnerabilities, which for the defender were:

– Exposure to the initial artillery preparation;

– Manoeuvre during counter-attacks;
– Movement during reinforcements.

The decentralized command practiced by the German army, with greater initiative granted to subordinate levels, which had proved beneficial in manoeuvre actions, undermined the kind of precise centralized management crucial to a battle of attrition, which would prove critical in operations. Ausftragtatik, even in the simpler form in use in 1916, required Falkenhayn to give is mission concept to his subordinates and allow for freedom of execution. But while "Bleeding the French Army White" is something that can be said to Generals, it simply doesn't travel well down the chain of command. Body count based small unit tactics are bad for morale, and troops soon learn to inflate enemy casualties' estimates, a phenomenon that was to make evaluating operational results in Viet Nam extremely difficult. German officers from Corps level downwards therefore gave their units conventional missions in terms of first seizing, then holding ground. And that's where the German plan for Verdun went wrong.

Falkenhayn had probably the best understanding of how to plan a set piece attritional battle of the whole war. He selected an area of limited strategic value for maximum freedom of action, correctly expecting that freedom to be denied to the French for political/historical reasons, Verdun being too famous a name to be abandoned. He was also correct in targeting primarily French counter attacks and reinforcements as the targets against which the German superiority in artillery would be best deployed. And the French high command played the battle exactly as he wanted, counter attacking aggressively and reinforcing the front lines for a forward defence. But once the initial German attack went deeper than expected, German commanders seized too much ground, not all of it ideal from an artillery fire point of view, and defended it far too strongly, allowing what was meant to be on the German side an Artillery Vs Infantry Battle into an Infantry Battle.

Falkenhayn limited control over the battle, coupled with a progressive assumption of traditional terrain conquering objectives in the later stages of the battle, prevented the initial goals from being achieved. Casualties are still a subject of discussion, John Mosier in particular having challenged German casualty figures for the whole of the war, but French casualties were close to 160.000 killed and missing, Vs 140.000 for the Germans. The kill ratios were progressively more favourable for the French as their artillery progressed from being mostly made up of 75mm field guns to a higher percentage of

heavy howitzers, and as the French Air Force managed to wrestle air superiority from the Germans.

Verdun did erode French fighting capabilities, and prevented the Somme offensive from having a strong French component (that, given the more advanced French understanding of trench warfare offensives, could have caused proportionally greater German losses) (Figure 12).

Figure 12 – The Nieuport 11 was the first allied fighter superior to the Fokker Eindecker, and that gave the French air superiority over Verdun at a critical moment, reversing one of the basic elements of van Falkenhayn plan. Technological advantage turned very rapidly in World War One.
Source: https://upload.wikimedia.org/wikipedia/commons/1/11/ Nieuport_Ni._11.jpg

Both sides were to rethink their strategies after the battle, the Germans replacing von Falkenhayn with the Duo (Military History slang for the Hindenburg/Ludendorff working relationship), and moving German politics closer to military control at a time when Wilson was about to give them a possible way out of defeat (as we shall see later) (Figure 13). The French, drawing the wrong lessons from Verdun (they realized, correctly, that they had suffered more casualties defending than attacking, but failed to understand that the fact that both sides had stuck to forward defence due to the limited operational depth of the battle was causing them to overestimate the capabilities of artillery) replaced Joffre with Nivelle, forgot the lessons of 1915, and tried to apply against a wider defensive front with greater depth the lessons of Magin's final offensive of Verdun. They failed, and that failure sent the French Army into a crisis.

Figure 13 – General Herbert Plummer in a painting by William Orpen. The attritional battles of the Western Front favoured meticulous leaders with good management skills, of which Plummer is a consummate example.
Source: https://upload.wikimedia.org/wikipedia/commons/e/e1/Herbert_Plumer_by_William_Orpen_IWM_Art.IWM_ART_2398.jpg

The evaluation of results

Another problem emerged when evaluating outcomes; the need to resort to casualty estimates proved particularly difficult in a war where most casualties occurred beyond own lines and where the number of prisoners, traditionally the most reliable indicator of an opponent's losses, was not proportionally significant. The excessive optimism of all general staffs, which in the case of the British was reinforced by the classic reliance of democratic societies in the reports of its own organizations, led to grave errors and misled the High Command as to the actual effectiveness of the tactical models adopted, errors which still endure in the British historical analysis of the conflict, in an attempt to legitimize the major offensives of 1916 and 1917 within a model of attrition. The problem became even more complex as opponents adopted different concepts and continued to analyse the opponent's actions as if they mirrored their own. It was the case, for example, of the German estimates of

French casualties in Verdun, which assumed that the rapid rotation of the French units was due to exhaustion, and could not deduce that the adoption of short interval rotations had actually been a plan to prevent exhaustion; this led to a greatly exaggerated estimate of French casualties and to the persistent continuity of an operation that had already outlived its usefulness.

This lack of accurate data about the effectiveness of the tactics being used made precise evaluations of their merits difficult, and must be taken into account when evaluating the performance of the generals on all sides.

The one aspect of the war in which it was easier to evaluate what was working and what wasn't was air combat, since the limited depth of the combat areas made it easier to confirm air kills[11]. As a result, aerial combat doctrine evolved much faster, and with less trial and error, than ground doctrine (Figure 14). This, however, was limited to air superiority, and regarding the effectiveness of bombing the officers conducting the air war had even greater problems in evaluating the success of their tactics.

Figure 14 – Oswald Boelcke was the main figure in the rapid evolution of air combat tactics, assisted by the fact that he could evaluate results much faster and with greater accuracy than Army Commanders.
Source: https://en.wikipedia.org/wiki/Oswald_Boelcke

[11] In World War Two the reverse happened, aerial kills being considerably inflated by almost all Air Forces, with the result that false data often seemed to validate tactical choices that were actually wrong.

Winning the war

In 1918, the progressive evolution of the conflict finally yielded a French model that would prove the most appropriate to the conflict in the western front, with a clear separation of the political sphere (where the inspirational leadership of Clemenceau[12] took the stance of supporting the war effort without interfering in its conduct) and the military sphere (with the acknowledgement of a clear rationale of attrition), allowing the military level to deploy successive offensives that aimed to destroy the German forces, more than to break through their defences.

The first French "scientific" attack came at the Second Battle of Artois, in May 1915, when the XXXIII Corps, led by Petain, with elite divisions (including the Moroccan Division, Fayolle's 70th ID and Barbot's 77th ID) in the Vimy Ridge area, and demonstrated that maintaining speed and attacking in depth were important, but not at the expense of reduced control over the course of the battle.

The increasing offensive skill of the French Army was to be displayed by the performance of Fayolle's sixth army while attacking alongside (and a lot more successfully than) the British in the Somme in 1916

The French were to show that they mastered the new attritional offensive tactics with their 23 October 1917 attack on the Chemin des Dames, (again by the sixth Army, now led by General Maistre and part of General d'Esperey Group d'Armees du Nord)) notable not only because it took a ridge that the French has been fighting for since 1914, but because at a cost of 14.000 casualties the French has inflicted 50.000 (notably among the German counter attack battalions who were specially targeted by the French artillery, that used gas intensively to interdict German logistical movements in the battle area) of which 12.000 were prisoners of war, taking 200 guns and 720 machine guns. With this victory, called the Battle of Malmaison, the French Army had found the formula it would improve on in 1918 and that would win the war, and shown that it at fully recovered from the strikes of earlier that year.

The allied forces that fought this battles were much more advanced than the ones that had started the war, the most evolved being the French Army that had come out of the crisis of 1917 with a new organization, with

[12] Clemenceau also managed to unify the political forces in their support for the war, ending a crisis that had started in the spring of 1917 with the dismissal of Joffre, and of war minister Lyautey.

an emphasis on mobility (Figure 15). The French army had 88.000 motor vehicles and 25% of its artillery was motorized (Figure 16), the same percentage the Wehrmacht had in World War Two and doctrine that were to be the model for post war armies. (By late 1918 French FT-17 tank battalions had radio links with a dedicated artillery spotter aircraft and a 155 Field Gun Group in direct support). The poor performance of the French Army of 1940 as done a lot to distort the contemporary perception of its Worlds War One predecessor. The fact is that in the post war years the worlds most respected military thinker was Foch and the French Army was widely regarded as the best in the world. The U.S: Army, for example, adopted French inspired tactics, material and organization, rather than following the British model. The U.S. Army of 1944 can be seen as the true heir of the French Army of 1918.

Figure 15 – The FT-17 weighted ¼ of an Mk IV and had ¼ of its crew, but in most combat situations could bring the same volume of fire to bear on a single target and was better armoured. It could also be moved around in truck.
Source: Wikipedia Commons

Figure 16 – A 194mm Self Propelled Gun. The successive battles concept implemented in 1918 required heavy mobile firepower, and the French Army introduced this advanced vehicle designed in Schneider's Le Creusot works that could carry either a 194mm Gun or a 280mm Howitzer. Fifty survived to see action in the Second World War.
Source: https://i.ytimg.com/vi/xrYMdKYfKng/hqdefault.jpg

Thus, in 1918, Foch was able to implement a concept Petain had theorized since 1915, that the war could only be won a continuous succession of shocks. Petain had in fact in 1917 issued directives that specifically stated that the objective of this offensives should not be a breakthrough, and that the superior allied mobility should be exploited to multiply the number of limited offensives along the German lines. This perception of a "bigger" battle composed of a series of coordinated battles can be seen as a precursor of the operational level of war, and would be replicated in the first soviet operational concept, of successive operations on broad fronts, that would formally incorporate the operational level of war.

The Allies therefore achieved Sun Tzu's ideal by attacking Ludendorf's perception of reality, forcing him into a type of combat where the true 'Schwerpunkt' was not on the ground, but on the undefended interval between reality and its perception by the German general staff. Luddendorf defended each sector to prevent a breach; something which he feared would be decisive, not realizing that Foch only intended to make him pay the price of each apparent defensive success, plus interest. This asymmetry of perception was enhanced by an asymmetry in material assets, with the Allies employing

combined combat arms intelligently[13] (something which had already become clear in their management of the response to the 1918 German offensive[14]), and would finally result in the progressive but irreversible destruction of the German combat capabilities[15] by the successive and continuous allied offensives.

The German misunderstanding of the nature of the conflict would later be expressed in a reductive and distorted view of the causes of the defeat, in which the lack of perception of a decisive military defeat would go on to feed the myth of having been 'stabbed in the back' (Figure 17).

Figure 17 – Ludendorff with Hitler at the time of Munich Putsch of 1923. The "stab in the back" myth facilitated Nazi historical revisionism.
Source: http://www.historyinanhour.com/2010/11/08/the-munich-putsch-summary/

[13] The German "infiltration" tactics are essentially infantry tactics with well thought artillery support. The Allied integration of tanks, artillery and aviation assets form the true origin of combined tactics.

[14] Caporetto had shown that a penetration in large scale was possible (even though the defenders under performance inflated the results considerably) but also showed that the defenders could always fall back on another line if they had reserves, in the case the line of the river Piave.

[15] In October 1918, before the Armistice, the German Army had between 750.000 and 1.000.000 deserters most of which were grouped in rear areas. The idea of an undefeated German Army is a fabrication that become part of the "stab in the back" myth.

2. REWRITING THE ART OF WAR

Once it was over, the War was fought again, this time in books. Leading Generals on both sides wrote their memories, fuelling a war that has been joined by generations of historians, in which truth was, as often happens, was one of the first casualties. Another war, also fought primarily with books, either for sale or for issue as field manuals, started almost at the same time, for a rather more consequential battlefield. What was at issue here was how to incorporate the lessons of the war into a new military doctrine that would confer on its users a decisive advantage.

Towards a mechanized army – The French see the path and refuse to follow it.

The first man to formulate a practicable proposal for a mechanized force was General Estienne of the French Army, who, in late 1914, proposed the use of armoured vehicles to support the advance of the Infantry, completing this in January 1915 with the proposal to build armoured personnel carriers to for the Infantry. After cooperating with Le Creusot on the generally unsatisfactory St. Chammond assault gun Estienne cooperated with Renault on the design of the first modern tank, the Renault FT, and formulated the general doctrine for its employment both in direct infantry support and in independent tank units. From October 1916 he become the commander of the French Army Assault Artillery (meaning armoured forces) and in that capacity was directly responsible for the evolution of armoured doctrine of the French Army that would prove very successful in 1918 (Figure 18).

Figure 18 – The Renault FT introduced the idea of a "family" of vehicles based on the same AFV, being produced in tank (2100 built with a MG and 1246 with a 37mm gun); Assault Howitzer (39 built with short 75mm guns, shown on the right) and Radio tank (188 built shown on the left). Small numbers of other versions were built later. France produced 3177 FT tanks until the end of the war, and at the end of the war there were 2700 in the front line, total combat losses having been 439 tanks, most of which were destroyed by field guns

Source: http://www.littlewars.se/french1940/ft17_6.jpg

After the war Estienne proposed a reorganization of the French Army to turn it into a Combined Arms force, suggesting the creation of Mechanized Army Corps of 100.000 men, equipped with 4.000 tanks and including 20.000 mechanized infantry, supported by tactical aircraft. He submitted his ideas in extensive documents, such as his 1919 "Memoires sur les missions des chars blindes en campagne" and in conferences, notably in Brussels in 1921, or in magazine articles, continuing to study and promote combined arms doctrine until 1933, dying in 1936. His ideas could have kept the French

Army in the leadership position it enjoyed in 1918, but were not adopted. Unlike other proponents of mechanization, such as Fuller, Estienne ideas were advanced without being radical and would have been comparatively easy to incorporate into post war armies.

The French Army was effectively split into a progressive (as in pro-mechanization) and a conservative faction that opposed the creation of independent mechanized/armoured units and advocated keeping the tanks in a purely support role. The debate also gained an unfortunate political element, since the progressive faction favoured a professional Army, an idea that was regarded as dangerously right wing, while the conservative faction supported conscription, a citizen Army being seen by the left as an integral element of the republic. This was not entirely unfounded, Weygand, the leader of the progressive faction, was close to the extreme right wing politically, while the traditionalist Gamelin was close to the leftist government. In 1934 when de Gaulle published his book "Vers le Armee de métier" his defense of a professional Army was denounced by Blum as a threat to the Republic. The political situation in France meant that a compact, professional mechanized Army was seen as o political danger and traditionalists could use the political support they had in the left to ensure control of the Army. This culminated with a concentration of authority in General Gamelin, the only general that the left wing government trusted, and the man most responsible for the military disaster of 1940. Gamelin favored a command structure that focused on retaining control rather than promoting efficiency. This made political sense, but invited military disaster Critically underfunded during Weygand's years as Army Commander, the French Army finally created armoured divisions but Gamelin's inefficiency meant that the process, started in 1936, progressed so slowly that the Divisions only become operational in 1940 and lacked training and a functional doctrine of employment.

The magnitude of the defeat meant that the French contribution to the development of combined arms doctrine was largely forgotten, and apart from French studies, Estienne leading role in the development of mechanized warfare is mostly unrecognized. His work was, however, much discussed and influential at the time, and it's easy to see its influence in the early soviet mechanization doctrines and in the mechanized warfare doctrine of the United States Army.

Death from above – Air power and its implications

To those who are familiar with the capabilities of bombers of the 1920s, slow creatures built with fabric over metallic or wooden frames, loaded with highly inflammable fuel in non-self-sealing tanks unprotected by any kind of armour, the idea that wars could be won purely with Air Power seems clearly premature in the immediate post war period. It was however one that was to gain considerable following among the leaders of Air Forces, most notably in Great Britain and the United States.

The most famous of the early proponents of air power was Giulio Douhet, whose book "The Command of the Air" is still a reference work at Air Force Academies today. Like Fuller, Douhet was a military idealist, who though well in advace of what was practicable with contemporary technology. The biggest problem with Douhet based doctrines was that by concentrating limited resources on "strategic" bomber forces that without weapons of mass destruction[16] lacked the capability to have a strategic impact, they left the Air Forces of the countries that followed those doctrines weaker in the critical area of battlefield air superiority (Figure 19). Douhet was absolutely right in stressing the importance of Air Power, but the newly independent Air Forces invested in a premature, and therefore wrong, type of Air Power. The tenacity with which these Air Forces defended their independent status also led them to view the Armies and Navies of their own countries as competitors rather than partners, going against the trend towards combined tactics that had proved so effective in the last year of the war. In that sense, the Air Forces that followed Douhet too closely ended up in a situation similar to the navies that had followed Maham too closely in the early XX century, and had acquired a powerful battle line of heavy ships at the expense of a balanced Fleet. The Air Forces suffered the additional problem that, while battleships were a mature technology in the1910s, the strategic bomber equivalent of HMS Dreadnought is either the B-17, or if we want to set higher standards, the B-29.

[16] Had the Luftwaffe used nerve gas (that the Germans had and the allies didn't) against British cities the effect might have proved decisive. The RAF could have retaliated, but with less effective chemical weapons against more distant targets would have been at a disadvantage. This is, however, something that must be remembered when considering the full implications of Douhet work.

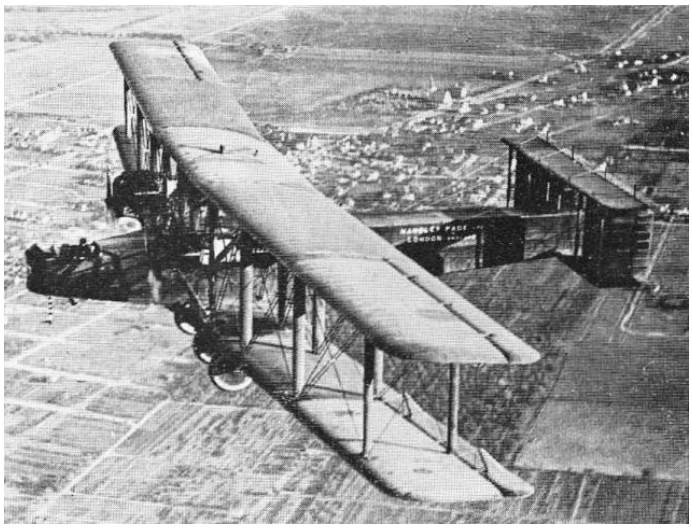

Figure 19 – The Handley page V/1500 was the state of the art bomber at the end of the Great War and as such the "bomber that will always get through". The strategic potential of these machines would have to rely in the use of chemical weapons against civilian targets, in which case even a few bombers managing to break through the defences could cause massive casualties.

Source: https://defenceoftherealm.files.wordpress.com/2015/08/handley-page-hp-15-v-1500-c.jpg

Ironically, the Air Force that is always criticized for being too focused on the tactical level, the Luftwaffe, was the one that generated strategic results by providing decisive air support and aerial superiority over the battlefields of the Battle of France in 1940. The Luftwaffe did it not by defeating the French Air Force, whose fighter force was actually stronger at the end of the campaign than at the start, but by maintaining local air superiority and providing tactical air support (Figure 20). The old Cold War Soviet saying can be applied to 1940 when the Wehrmacht proved that the best Air Superiority weapon really is a PzKfw III parked on the runway (being a storm watcher, the author couldn't just say "a tank parked in the runway).

Figure 20 – A Dornier Do19 heavy bomber prototype. The Luftwaffe decision to cancel the heavy bomber programme after the death of Generalleutnant Walther Wever (the Luftwaffe's first Chief of Staff) and focus on building larger numbers of tactical aircraft, is often criticized with the argument that they would have been very useful in the Battle of Britain or for bombing targets deep in Russia. What should be remembered is that without the tactical support of the Luftwaffe, the Wehrmacht would not have won the Battle of France, and the Battle of Britain would never have taken place.
Source: http://www.unicraft.biz/germ/do19/do19-ph3.jpg

Later in the war the Allied bomber forces were to be successful (but never decisive in any Douhetesque sense) because they complemented superb battlefield air superiority and tactical support forces. It must be noted that what most helped win the Battle of the Ardennes was not the strategic bombers preventing the Germans from having enough tanks (which the bombers failed to do, German tank production in 1944 having exceeded any previous year) but the tactical fighters preventing those tanks from having any fuel (which they did, strafing and rocketing all German logistic vehicles)

The haves and the have nots – Asymmetrical mechanization

Major-General John Frederick Charles "Boney" Fuller was the leading voice of British Military modernization after the Great War. Unfortunately, one only has to read his 1922 preface to his book “The reformation of War” to understand why he was totally the wrong person to lead the reformation of any Army (Figure 21). A self-professed military heretic who claimed that “without national reform can there be no true military reform, for the reform of both is interdependent” his political views, general attitude, and obsession

with occultism (his first book was "The Star in The West: A Critical Essay Upon the Works of Aleister Crowley" made him completely unacceptable not just for the military establishment, but for any democratic government. Sentences like "Man possesses no right to live, but solely might to kill" are better suited to a Bond Villain monologue than to a white paper on national defence.

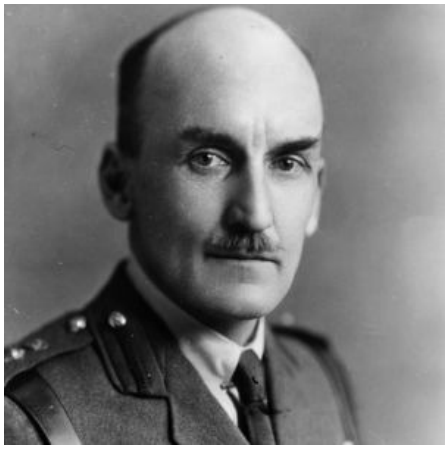

Figure 21 – Major-General John Frederick Charles "Boney" Fuller.
Source:https://www.nationalvanguard.org/wp--ontent/uploads/2015/09/MTE5NDg0MDU0NTgwNzkwNzk5.jpg

The most devastating criticism of the work of British military theorists like Fuller or Lidell Hart was delivered by Soviet Marshall Tukhachevsky critique of Fuller's work, in his 1931 preface to the abridged Russian edition of Fuller's "Reformation of War"

The Soviet Marshall assumes that, as no nation will have a monopoly of progress, mechanization will spread, and much as mechanization of industry had led to an expanded proletariat, mechanization of war would lead to more massive, not smaller armies when nations deploy their "technological mass" on the battlefield. In a fight between two industrialized states of different potential an 18 division Army with 5.000 tanks will be more likely to face a 180 division Army with 50.000 tanks than a 180 division army without tanks. In the ensuing war the smaller army will be naturally overwhelmed even if, in an effort to fight quantity with quality, it was to form units or complete armies of elite troops (Here Tukhachevsky very accurately predicts the course of Worls War Two). If anything the maintenance requirements created by mechanization would increase the mass of the armies. It would therefore be more logical to prepare for a war between two large mechanized armies than to conjecture about asymmetrical

wars between mechanized and un-mechanized armies, as Fuller often does. Tukhachevsky then goes on to criticize Fuller for failing to expand the concept of mechanization into what the Russian calls Airmechanization.

The Soviet Field Marshall was essentially right. Fuller's "Reformation of war", remembered now essentially due to the presentation of the principles of war[17] is written in a prophetic style that appears very strange for modern readers (and was probably quite shocking for 1920s readers) and fails to recognise any political dimension in the conduct of war (Figure 22). His defence of chemical weapons on the grounds that they are cost effective is chilling but the use of gas is fundamental for his military doctrine, since he sees it as a way of preventing infantry from operating, therefore reducing war to mechanized units unencumbered by gas masks. This led to a tendency to mechanize everything[18], resulting in the idea that infantry could be replaced with very light tanks armed with machine guns, that were soon called tankettes, and that were to prove extremely vulnerable to even the lightest anti-tank weapons.

Figure 22 – Polish TKS Tankettes in German use. Conceived in the context of a possible fight against an un-mechanized force without anti-tank weapons, this vehicles proved totally useless in combat between opposing mechanized forces, wasting precious resources.
Source: https://i.pinimg.com/originals/cc/62/b9/cc62b99c51873c85fde80e8292e07156.jpg

[17] Fuller presents eight principles,
1st Principle. — The principle of the objective.
2nd Principle. — The principle of the offensive.
3rd Principle. — The principle of security.
4th Principle. — The principle of concentration.
5th Principle. — The principle of economy of force.
6th Principle. — The principle of movement.
7th Principle. — The principle of surprise.
8th Principle. — The principle of co-operation.
[18] The focus on nuclear weapons had a similar effect in the 1950s and early 60s, with a degradation of basic Infantry capabilities.

Fuller's view on the possibilities of tanks are also very unrealistic. Let's consider is views on the future of the tank, as expressed in "The Reformation of War"

(i) It reduces the target, for it does away with great march columns and immense battle formations.
(ii) It can be made gas-tight, so completely that even unknown gases will lose their dread.
(iii) It can be made bullet-proof, even against bullets of enormously enhanced powers to existing ones.
(iv) It can be made to move at 20 miles and more the hour or 200 miles the day for several days without refilling.
(v) It can move across country, and, consequently, free itself from the dominion of roads and railways.

As anyone who has studied XX century warfare even superficially will notice:

(i) Is wrong, since mechanized units would always require large support columns, increasing rather than reducing the target.
(ii) Was to be proved right.
(iii) Is wrong, since antitank guns capabilities were easier to increase than armor, especially once HEAT charges become common.
(iv) Was right about speed, totally wrong on the need to refuel, speed and weight being very costly in terms of fuel consumption.
(v) Is partially true within limits, and those limits can be exploited.

Given this unrealistic assumptions, Fuller then decides that the Infantry is now useless, saying: "*The question now arises, what the infantry can do? These troops can do nothing outside playing the part of interested spectators*". Field Marshall Montgomery would later answer that question stating "without Infantry you can do nothing, absolutely nothing". Fuller rejected combined arms tactics, favoring pure tank forces, considering that tanks would prove virtually invulnerable to Infantry and to Aircraft.

In his thoughts on Imperial Defense he goes as far as suggesting that a purely mechanized force could easily put down an insurgency in Afghanistan by bulldozing its way into Kabul (an idea that British veterans of Afghanistan must find particularly dated), following this idea with advocating the use of the Army within Great Britain as a defense against what he refers to as "howling blood-intoxicated gorillas", a description that he probably felt included Britain recently elected first Labor Government. Fuller naturally advised the use of chemical weapons for the maintenance of public order,

sensibly suggesting that for this purpose they should be of the non-lethal variety. In the whole, he loses himself in fantasist visions of armored forces massacring old fashioned un-mechanized armies and fails to address to main problem, the use of combined arms forces in large scale conventional war between industrialized nations.

The British Army was eventually to become the most motorized Army in 1940 (the whole BEF was motorized) and its first Armored Division was deployed to France, but its combined arms doctrine was to fall behind its peers and its tank forces were to suffer from compartmentalized roles (Cruiser tank, Infantry Tank) and from an excessive reliance in light tanks of dubious combat value.

Going back to Moltke by armoured car – The limits of Blitzkrieg

Blitzkrieg is one of the most misunderstood phenomenon of the history of war. Generally perceived as a new form of war, it was nothing of that kind. Blitzkrieg didn't change anything about the way the Germans conducted war. The conduct of war is after all a strategical problem, and Blitzkrieg was purely a new way of conducting battles, being deliberately formulated as a tactical level doctrine. It was only developed at the tactical level because its creators failed to see the Great War as a definitive tidal change in the way wars were fought, and saw it rather as technologically induced atritional intermezzo before the natural primacy of manoeuvre was restored. They had grown, after all within the Moltke-Schlieffen system and regarded Moltke's triumphs of 1866-1871 as proof of its superiority. Guderian's Achtung Panzer reverential quotes of the elder Moltke leave no doubt to the great Field Marshall prominence in the German military pantheon. There is nothing wrong with hero worship when deserved, and Moltke was arguably the greatest military commander of the last two centuries, but time waits for no one, and by 1937 Moltlke's time was over.

This system, which we will refer from now on as simply the German System, is essentially an evolution of Napoleonic military theory and was based in two main principles. The first was the use of manoeuvre in depth to gain an advantage, ideally by encircling the opponent, and the second was the search for a decisive battle that could bring the war to a swift conclusion. Both principles had been deeply ingrained into the collective mind of the German General Staff by Schlieffen, and in the form used by the Wehrmacht in World War Two it can be regarded as the ultimate, and most effective,

version of the Napoleonic military logic. It, was, however, essentially a XIX century approach at the top (strategic) level, a reality that is masked by its modernity at the bottom (Tactical) level. The whole focus is on the destructions of the enemy military strength, war being seen, despite the extreme politicization of Nazi Germany, as a purely military problem, a logic that was taken to the extreme with Barbarossa, a plan for the destruction of the soviet army that had no provision for the defeat of the soviet state. One example of this is the lack of any plan to use the nationalities issues to weaken the Soviet Union, despite the extensive, and successful experience, of the exploitation of this issues by the OHL in 1917/1918.

The early German victories of 1939/1942 did a lot for the image of Blitzkrieg, but must be seen in context. Victory against Poland was a direct consequence of a combination of numerical, technical and geographical advantage. Victory against the allied forces in France (the British would always refer to it as victory against France, minimizing their own role in the disaster) was built on the extremely bad performance of the allied high command, that failed to identify the main German effort and committed the bulk of its forces in a poorly planned operation without the basic precaution of retaining a strong reserve[19], and on air superiority (Figure 23). This second factor, decisive in virtually all campaigns of World War Two, was mainly the result of Professor Messerschmitt having been the only designer in the thirties capable of conceiving a fighter that was at the same time one of the best in the world but also extremely easy to mass produce. We can debate for hours whether the Bf 109E-4 was a better fighter than the Spitfire Mk I, but what can't be denied was that the Bf109E could be produced faster (6.000 man/hours for a Bf109 vs 15.400 for a Spitfire), allowing the Luftwaffe to dominate the skies over France with massed expandable Bf109s, while the RAF kept its precious Spitfires in Britain and the Armee de L'Air struggled to get its D520s into units[20].

[19] A basic rule is that when the intentions of the enemy are not well known, the reserve must be strong to provide operational flexibility.

[20] The French Air Force was also short of trained fighter pilots, starting the intense air battles of May 1940 with just 700, half of which were lost in combat in the following six weeks.

Figure 23 – An illustration of Ernest Udet's personnel Curtiss Hawk fighter bomber. The U.S. Navy and the Royal Navy had developed dive bombing as the only way to accurately hit moving ships. Curtiss had developed the Hawk II as a fighter bomber capable of dive bombing with a 250Kg bomb. Udet, then responsible for Luftwaffe procurement policy, became an enthusiast for dive bombing while flying a Curtiss Hawk, and ordered a near copy, which become the Hs123A, as an interim model, and a more developed aircraft for future equipment of the Luftwaffe. Junker's entry in the competition for the more advanced aircraft decade the famous Ju87 Stuka. Such is the myth of Blitzkrieg that many people still think the Germans invented dive bombing especially for it
Source: https://www.google.pt/search?q=Udet%27s+Curtiss+Hawk+images&source=lnms&tbm=isch&sa=X&ved=0ahUKEwjY7O6S2vnWAhUG1xQKHWCKDyQQ_AUICigB&biw=1920&bih=900#imgrc=kOQZWEAl7gomkM:

A combination of air superiority, tactical prowess and in some cases (Greece, Yugoslavia) numerical superiority was to further expand the myth of the Blitzkrieg doctrinal superiority, a myth that was very convenient for the losers, since recognizing the adversary doctrinal advantage is a lot more palatable than admitting incompetence. A revealing example is the comparative study of allied planning in 1940 and in 1944, that shows a surprisingly similarity in the allied options, in both cases opting for a concentration of forces in the north and allowing for an exposed centre. The Germans also tried a replay of their 1940 plan in late 1944, only to discover the difference that air superiority made.

One of the main reasons why this happened was that German inter-war doctrine evolved in a Bottom/Up manner, innovation being first introduced at the small unit level and being progressively incorporated into higher echelons as the Army expanded. The basis was the infiltration tactics doctrine developed in the second half of the Great War and used in the offensives of 1918. The Germans had an inflated view of the success of these offensives, such a view being a consequence of the stab in the back myth and of the misunderstanding of operational realities of 1918 previously detailed. Panzer doctrine therefore

grew on the solid base of infiltration tactics, and Panzer Divisions grew on the basis of the Stormtrooper assault divisions. Much as Ludendorff saw the Storm divisions not as an elite, but as the model for the whole German Army, von Seekt initially saw the (future) Panzer Divisions as the model for all the units of his vision of the post Treaty of Versailles German Army. He expected, once Treaty restrictions were eased, to expand to a 300.000 men force, and he also expected that force to be fully mechanized and therefore capable of dealing with the mobility requirements of a country surrounded by potential enemies[21]. The Panzer Divisions were, therefore, never though as specialized tools, such as the French DCRs or DLMs[22], being balanced units capable of all types of missions, a versatility they were to prove countless times in the war, and that sometimes led them to be committed to battles that could have been tackled by Infantry Units[23], often reducing their strength and their effectiveness for the specialized mission they alone could have fulfilled.

Really deep thoughts – The Russian revolution

There is a common, but completely wrong perception that sees the evolution of Soviet combined operations doctrine as derivative and heavily influenced by western, and mostly German, thinking. This is based on the distorted reality portrayed in the books written by Liddell Hart and German Generals after the war, and on a lack of understanding of both the nature of Soviet/German cooperation in the 20s and 30s and of the intellectual process that led to "deep operations doctrine".

Marxism-Leninism is at the core of all Soviet military theory. Lenin was extremely influential in all aspects of soviet thought and the military is no

[21] A lot of those who criticize the development of the German Armed forces before the Second World War forget that in the mid-30s it was impossible to anticipate the fall of France, or the rapid elimination of both Czechoslovakia and Poland. The Luftwaffe, for example, could not foresee the needs of the Battle of Britain before dealing with the needs of a defensive war against France, and the Kriegsmarine couldn't evaluate the need for submarines to operate from French ports before France fell.

[22] The DCr (Division Cuirassée) was essentially an armored fist for shock missions, while the DLM (Division Légère Mécanique) was optimized for traditional "cavalry" missions. The quality of their Somua and B1bis tanks could have made them dangerous adversaries in 1940, given the very limited firepower of German tanks at the start of World War Two.

[23] The most extreme example being Paulus committing his Panzer Divisions to urban fighting in an effort to take Stalingrad, leaving insufficient mobile units outside the city to act as a reserve when the Soviets counter attacked.

exception. Two basic tenants would frame soviet military theory. One was that the USSR was bound to be attacked by the imperialist states, and that in the resulting war the ultimate aim of the Soviet Union war would be to turn imperialist war into a civil war in those states, allowing for the rise in those states of proletarian governments that would ally themselves with the USSR. The other was that the fate of war would be determined by political-economic factors, essentially by production and mobilization capability.

Having incorporated Clausewitz by way of Engels, a remarkable military theorist in his own right, Lenin was fully aware of the political nature of war and of the importance of breaking the enemy will to fight. He was also certain that a socialist state would have a stronger will, since it could rely on the party to ensure the people's adhesion to the cause, and a stronger production capability thanks to the stronger mobilization possibilities of a centralized economy. Both these concepts were to figure prominently on Frunze's and Tukhachevsky work. This political base mean that Soviet military doctrine was designed Top>Down, starting at the strategic and political level and then developing the required military doctrine and developing the Armed Forces required for its implementations. This contrasts with the way, has we have seen, that Blitzkrieg was developed Bottom>Up, starting with the use of new weapons by small units and expanding into large units tactics and incorporating the required evolution into national doctrine.

Within this framework, the Soviets naturally rejected both the compulsion to restore manoeuvre in the neo Napoleonic sense prevalent in the west and the idea that wars could be won by small, highly mechanized armies against large, traditional ones.

The first Soviet doctrine, usually designated as "Broad front", or "successive operations" was introduced in Tukhachevsky articles of the early 20s and formulated in the "Higher Commands – Official Guidance for commanders and field commands of the army and fleet" coordinated by Frunze. This model, that is most notable for introducing the "operational level" of the conduct of war, was to form the base from which deep operations were to evolve. As early as 1926 Tukhachevsky wrote that "modern operations involve the concentration of forces necessary to strike a blow and the infliction of continual and uninterrupted blows of these forces against the enemy through an extremely deep area".

The aim was, in clearly Leninist terms, to inflict a level of attrition that would lead to a breakdown in the enemy political (imperialist) order. The soviets were not trying to solve the attrition Vs manoeuvre dilemma, but, in the Marxist Hegelian dialectic tradition, to achieve a synthesis of attrition through manoeuvre.

It is therefore not surprising that the soviets first operational model appears to have been inspired by the western front allied offensives of 1918 that broke the fighting power of the German Army and brought Imperial Germany to the brink of a civil war collapsing its imperialistic government. This clear similarity between the concepts implemented by Frunze and the actions of the allied forces in final stages of the great could indicate that the allied command was, from September 1918, de facto operating at the operational level, maintaining a degree of control over the conduct of the war that the Germans, lacking the theoretical instruments for it, could not match. It was precisely in establishing procedures for the conduct of successive operations that the Soviets found the need to define the operational level and introduced the concept of operational art, first formulated by A. A. Svechin in 1926 in his book "Strategy" written while working at the new Frunze Academy.

The new concepts, expanded in Tukhachevsky's close associate and friend Triandafillov's book "The character of operations of modern armies" published in 1929 were made into official doctrine trough the 1929 field regulations that also introduced the concerns with mechanization that signal the movement towards deep operations (Figure 24). But before we begin to explain that concept, it is important, to provide context, that we summarize Tukhachevsky views on war, as explained in his extensive 1931 article "New questions of war" and his 1928 article for the Great Soviet Encyclopaedia "War as a problem of Armed Struggle"

Figure 24 – Marshall Tukhachevsky was the leading intellect of the development of the Soviet Armed Forces until his execution in the purges.
Source: https://upload.wikimedia.org/wikipedia/commons/f/fb/%D0%9C.%D0%9D._%D0%A2%D1%83%D1%85%D0%B0%D1%87%D0%B5%D0%B2%D1%81%D0%BA%D0%B8%D0%B9.jpg

Engels maxims that "Nothing is quite as dependent on economic conditions as the Army and the Navy" and that "the prerequisite for every advance in the conduct of war must likewise be new means of production" are the starting point for Tukhachevsky's view that future wars would be fought by mass armies benefiting from the full resources of their nations. He argues that war should not be fought only with military forces, but with "organized and concerted pressure and by offensives on every front of the conflict – economic, political and so on". He states that the greater mass of modern armies will not make war move at a slower pace, but rather that the progress in technology will increase the pace of operations.

To characterize the way in which armies should incorporate the advances in technology, he creates the term Airmechanization, that he characterizes as the incorporation of advances in aviation, tanks, radio and chemical warfare in an integrated whole.

This integrated mechanized army will fight a deep battle using mechanized airborne forces in conjunction with long range tank groups including infantry in armoured personnel carriers, supported by mechanized engineer units and attack aircraft to penetrate the enemy defences and engage his rear echelon while tank supported infantry strikes his first echelon defences. This will, he argues, require all tanks to have a capable antitank gun, as in a large scale mechanized battle "success will go to the formation that has more gun tanks capable of destroying enemy tanks" (Figure 25).

Figure 25 – A BT-5 fast tank in an exercise. The frame around the turret is a radio aerial. Both the T-26 infantry tanks and the BT-5 fast tanks had a 45mm gun that was effective as an antitank weapon and could fire a useful HE shell.
Source: http://www.tanks-encyclopedia.com/ww2/soviet/photos/bt-5-fast-tank_in_exercizes_1935.png

He remarks that this mechanized armies will have an "enormous" need for logistic support, stresses the need for motor transport, since, he warns, air power will render railway transport undependable, and recommends using air transport for critical situations. He also stresses the need for extensive and realistic training and large scale exercises and for initiative on the part of all commanders, stating that "waiting for orders really means doing nothing".

Concerning naval forces, he advocates the use of submarines, torpedo craft employed "en masse" and aircraft, primarily high speed torpedo aircraft but also bombers using specially developed armour piercing bombs, claiming that the battleship had lost its importance.

It was within this intellectual framework that the next step of soviet doctrinal evolution was to be introduced.

Deep Battle was the final expression of Tukhachevsky operational thinking and was fully incorporated in the 1936 field regulations. This takes the concept of successive operations further. The limitation of that concept was that while it allowed for strong blows to be inflicted on the enemy, these were limited by the fact that only the first echelon of the enemy forces could be guaranteed to be exposed to the attacker's actions. As in 1918, the defender's greatest advantage was that he could manage his reserves to maintain some control of the situation and therefore control his side of the battle in order to limit his losses. This anticipated that future defending Commanders would make use of the experience of World War One, therefore having a better understanding of the need to "manage" their reserves.

Integrating the classical Russian military principle of "simultaneity" with the successive operations concept, deep operations were based on the idea of denying the defender the possibility of managing his reserves by engaging his forces in the entirety of their operational depth.

To do so the attackers would deploy in two echelons, the attack echelon and the development echelon. The first, consisting of all arms formations would engage the enemy first echelon and create the initial breach, through which the second would penetrate and engage the defenders rear areas and second echelon forces. The aim was not to create a classical pocket of surrounded enemy forces, but to destroy the enemy forces in a "in depth" battle. The enemy main forces would be destroyed by the attack echelon, while the enemy reserves and rear units would be destroyed by the development echelon. The whole battle would be supported by coordinated air attacks, and whenever possible by airborne assaults, including the air deployment of mechanized units. Simultaneity and specialization are therefore of key importance to understand how big is the difference between deep battle and Blitzkrieg.

In a defensive situation, the defenders would create an in depth defence, reversing the process by holding key points and creating a network of anti-tank lines to destroy the enemy inside the defensive lines.

This concept was to be expanded in the revised 1939 field regulations, that were never to be issued since most of the people who were working on them were killed in the purges.

To perform this type of battle a new mechanized force structure was created. The main deep penetration forces were to be the Mechanized Corps, instituted in 1935, tank heavy formations with two tank brigades (BT tanks) each with four tank battalions and one motorized rifle battalion and one rifle Brigade (plus a Recce and a Signal Battalions).These formations had a strength of 348 fast tanks, 63 Recce Tankettes supported by 52 flamethrower tanks and 20 guns.

Having created their first mechanized brigade in 1930 the soviets had, in 1936 four Mechanized Corps and six separate (independent) mechanized brigades, along with fifteen Cavalry divisions (with four cavalry regiments and one tank and one artillery regiment each) and an additional six separate tank regiments and eighty three tank battalions or companies for infantry support. These were backed by a dedicated tactical air force with modern aircraft that could guarantee air superiority and provide extensive close air support and interdiction (Figure 26), and by a large independent air force with powerful four-engine bombers. They could rely on three airborne brigades and an additional three airborne regiments that had performed large scale exercises, including mass drops and air deployment of tanks and logistic vehicles.

Figure 26 - A Polikarpov VIT-2 of 1937. A dedicated heavy anti-tank attack aircraft, well protected and armed with two 37mm antitank guns, the VIT-2 was the 30s conceptual ancestor of the A-10 Thunderbolt II and an illustration of the links between Deep Battle and Air Land Battle.

Source: http://cdn-live.warthunder.com/uploads/2f/c66eeb9a44e5a9ab85ae690fc04f161ef71044/VIT-2.jpg

The massive purges of the Soviet Armed Forces in the late 30s reduced the capabilities of the Soviet High Command to a point where they were incapable of using their own doctrine. After massive defeats against the Germans in 1941, in which they managed anyway to inflict proportionally more casualties than anyone else had done before in the war, they won the battle of Moscow at a terrific cost and tried to beat the Germans at their own game, using conventional tactics with either disastrous (as in Kharkov in 1942) or partially successful results (as in the Planets offensives, that included victory at Stalingrad but defeat at Rzhev). They kept winning at enormous cost in 1943 and it was only in 1944 that the Soviets were capable of fully implementing deep operations doctrine, with devastating results, when they destroyed Army Group Centre in operation Bagration. They went on to demonstrate the effectiveness of deep operation with the destruction of the Japanese forces in Manchuria in operation August Storm.

After a period in the 50s and early 60s when doctrine was conditioned by nuclear weapons, the deep battle concept re-emerged as the basis for the soviet doctrine in the early 70s, the soviets adopting late World War Two operations as models, especially Bagration and August Storm. In turn, NATO studies on how to fight the soviet threat were to lead to the recognition of the operational level and to the adoption of a deep operations model, with the Follow on Forces Attack studies and the introduction of the Air Land battle concept.

3. ATTRITION AND MANOEUVRE IN THE POST WAR REALITY

On his way to Portugal to take command of the British and Portuguese forces facing the French Armies in the Iberian Peninsula, General Wellesley (later Lord Wellington) wrote that "*they can overwhelm me but will not out-manoeuvre me*" a statement that revels both his self-confidence in his battle-field abilities and an understanding that one is outmanoeuvred only if one allows it to happen (Figure 27).

Figure 27 – Soldiers of the 3rd Foot Regiment defend their colours during the Battle of Albuera. Manoeuvre can sometimes be defeated simply by the outmanoeuvred side refusal to accept defeat, as Soult learned when, after having outmanoeuvred Baresford at the Battle of Albuera, he was unable to impose victory on the face of determined Allied (British, Portuguese and Spanish) resistance.
Source:http://www.10escadron.com/wp-content/uploads/2011/10/The-Buffs1.png

The opening battles of the Great War marked the last great attempt to impose victory through manoeuvre without depending on the exploitation of enemy mistakes or weaknesses. In the Napoleonic Age generals had very

limited information and that "fog of war" created opportunities. Clausewitz's "Fog of war" is thought of today either as a mental state or as a metaphor for unpredictability, but the German thinker was referring to the lack of situational awareness his contemporaries were bound to face. Daring Generals could use it to their advantage. During the closing stages of the Austerlitz campaign Napoléon was about to be caught between the Austro-Russian main force and Archduke Charles Army that, having avoided Massena attempts at checking them, was closing in. If the Coalition command had been able to have a clear picture of the real operational situation, they would have won. In 1914, with telegraph, radio, aerial reconnaissance and better trained staffs the fog was lifting. Hindenburg and Ludendorff were able to stage an impressive victory at Tannenberg because Colonel Max Hoffman could see through the confusion the Russian Army commanders had gotten themselves immersed in. They spent the following year trying to do it again and failing to secure the decisive victory they sought[24]. Each year communications and staff officers got better, while aircraft got much better. By 1916, the fog had lifted for good. It was no longer possible to out manoeuvre an opponent unless he made a mistake. When Ludendorff attacked in the west in 1918, despite all the efforts of the Jastas in their Albatross D.Va that were inferior to allied fighters (Figure 28) (the new and excellent Fokker D.VII fighters only started entering service in May and began to appear in large numbers in August) , the Allied High Command new exactly what he was doing.

[24] They would later blame von Falkenhayn refusal to move more divisions from the Western to the Eastern Front. Some modern analysis agrees with the argument that an extra ten divisions could have been moved East, allowing for the possibility of causing a greater impact on the Russian fighting ability.

Figure 28 – A Sopwith Camel fighter. Introduced, in June 1917, the Germans had no fighter that could match it or the Se5a and SPAD XIII until the Fokker D.VII, The Albatross D.V being inferior and the Fokker DR.1 triplane being too slow. Unable to maintain air superiority, the Germans faced the same problem they had faced at Verdun with the arrival of the Nieuport 11, and could no longer expect to achieve tactical surprise, allied observation aircraft being able to operate under fighter cover. During the March offensive Camels were also extensively used for ground attack against the advancing German forces.
Source: https://en.wikipedia.org/wiki/Sopwith_Camel#/media/File:RAF_Sopwith_Camel.jpg

This lack of operational surprise due to the now possible in depth observation of the enemy and to the possibility of divulging the relevant information rapidly built upon the existing asymmetric mobility of forces in rear and combat areas to limit the possibilities of manoeuvre.

The expansion of railway lines meant in fact that the mobility of forces within territory they controlled (and as long as their direction of movement coincided with an existing line) was much superior to the mobility of forces in combat areas or in area not served by railway lines (or were the lines had been destroyed). This was a radical change, and meant that given the much faster movements the traditional advantage of interior lines was much increased (a force moving by train could move more than ten times faster than a force moving on foot, and could do it twenty four hours a day rather than the eight hours of march a day possible without exhausting a marching force). In manoeuvre terms, this meant that as long as the defenders had reserves and operational depth, a breakthrough could be countered by a reconstituted defensive line on the next favourable position.

The effects were first felt on the American Civil War, were the initial battlefield superiority of the Confederates could not be exploited, Union reserves being moved by train to a new line and decisive victories being impossible. Once this fact was understood (the same rules applied to Unionist victories) the Union high Command introduced the "Anaconda" plan, to progressively deprive the southern states of the resources they needed to sustain their war effort (Figure 29).

Figure 29 – A contemporary representation of the "Anaconda Plan" to "choke" the southern states into defeat.

Source: https://en.wikipedia.org/wiki/Anaconda_Plan#/media/File:Scott-anaconda.jpg

The military implementation of the plan required both naval blockade and control of the Mississippi basin, but was only part of global strategy that was progressively adhered to and fully assumed when Ulysses S. Grant took overall command of all Union Forces in 1964 and that was unashamedly based on attrition. The combination of blockade with attritional battles that eventually exhausted the opponent and won the American Civil War is in essence identical to the Allied strategy against Germany in the Great War and representative of the acceptance of the limitations of maneuver in the

railway age against an adversary with interior lines of communication and a decent military command.

The American Civil War should have marked, therefore, the beginning of a new age of warfare in which it was no longer possible to achieve quick victories against a symmetrical opponent. Only overwhelming superiority either in numbers or in capabilities would still provide a quicker path to victory.

This awareness was to be delayed by the brilliance of Field Marshal Helmuth von Moltke, the elder, who was able to win quick decisive victories both against the Austro-Hungarian Empire and against the France. He did against Austria by denying his opponent operational depth through the calculated gamble of "forward concentration" and against France by inflicting a series of devastating blows in quick succession, the resulting shock and awe (and the fear of internal chaos) forcing the French into accepting defeat.

These victories were to be extremely influential, but what was generally not understood by those who fell under their influence was that they were only possible because grave errors committed by the defeated allowed them to happen. In other words, Victory through decisive maneuver battles could still be won, but couldn't be imposed. The age of symmetrical maneuver warfare was over. Symmetrical warfare would now inevitably become attritional.

Mechanization was to provide a hope of a return to Napoleonic warfare and decisive battle, but as we have seen on the previous chapter, it was to be short lived in practice, the German victories of 1939/41 being even more consented by incompetent adversaries than the ones of 1866 and 1870. The myth surrounding Blitzkrieg, kept alive by a distorted perception of German campaigns of World War Two , was however to keep classical maneuver in the text books of the military academies of the West. Towards the end of the century, with a better understanding of the realities of the Eastern Front in 1942/1945, and with NATO reaction to the evolved version of Deep Battle introduced by the soviets, the advanced armies converged on a doctrine that emphasizes the destruction of enemy forces in depth, essentially a modern approach to Tukhachevsky's synthesis of attrition through maneuver. A 1980s conventional war in Europe, in the age of Air Land Battle, would therefore have been a very deep, very fast, attritional battle that would have ended when one side ran out of reserves in which the progress in information and communication technologies allowed a much greater degree of control that made the classic soviet principle of simultaneity much easier to accomplish.

PART II
RETHINKING GLOBAL POLITICS

1. WEAPONIZING THE GLOBAL ECONOMY

In 1916 two countries joined the war on the allied side. Romania's entry in the war is usually explained as opportunistic, since it was widely believed at the time that the allied offensives of that year would bring the internal collapse of the central powers and end the war. Portugal's is usually explained by the dual objective of protecting its colonial empire and maintaining the countries perceived historical alliance with Great Britain, both of which only make sense if the Portuguese government was also convinced that the Allies would win the war.

The reasoning in these countries was superficial in more ways than just underestimating the resistance of the central powers. Their goals were formulated in the logic of the Eurocentric political system that had caused the war, and ignored the fact that while the nations of the world were fighting one another there was another combat taking place, between two contrasting world views and in that combat almost all the belligerents of 1916 where on the losing side, which was imperialism, while on the other side was capitalism, and the then neutral USA were fighting alone for that cause and wining. And, as benefited the champions of capitalism, their weapon of choice was capital.

The United States had never felt the need for colonies in the way that land starved overpopulated[25] European powers had, having if anything the reverse problem and in fact expanding until reaching its natural borders in a much more ancient pattern of incorporating land, suppressing the local population and repopulating it. With economic growth came the need to compete globally, and in the second half XIX century the United States could have joined the colonial race. It didn't need to, but neither did Germany and they did it anyway. The United States didn't, not due to any moral superiority or democratic particularity but because they had created a more advanced system that made imperialism of the classical colonial type obsolete (Figure 30). Influence is a lot less expensive than ownership, and the USA was able to

[25] A concept that must be seen within the limits of the productivity of the times, the countries pushing people into colonies or immigration are now complaining of risking being underpopulated while a lot more people than they had at the time.

exploit the resources of other countries without having to conquer, rule, and maintain them. US companies operated with as much efficiency and profit in Latin American countries as British companies did in British colonial possessions, but with minimal US government involvement and expenses. In a "Banana Republic" the locals took care of security, law and order, built and maintained their schools and hospitals and supplied all the required professionals. The US companies just took the bananas. An occasional reminder of the power of the US, which could range from a few shells from a gunboat's guns to small scale military intervention such as those in Mexico, Haiti, Nicaragua and the Dominican Republic just to mention the ones that happened during the Great War period[26], was all that was needed. From the US perspective, imperialistic geopolitics made as much sense as Ptolemy astronomical theory. They knew that the Earth was round and that money was the center of the universe, so the idea that it was necessary to "own" countries in Africa to be able to exploit their resources seemed absurd to them.

Figure 30 – The stages of U.S. continental expansion. Once it was over the United States were in an extremely advantageous geopolitical position.

Source: https://www.google.pt/search?q=stages+of+US+continental+expansion&source=lnms&tbm=isch&sa=X&ved=0ahUKEwj_xvOg8vnWAhVDXBQKHaSrCccQ_AUICigB&biw=1920&bih=900#imgrc=xyPnocO9X3u9RM

[26] It's interesting to note that the "idealist" Wilson never hesitated in using military force against small Latin American states.

The two systems could cohabit peacefully for some decades, the USA having given proper warning, through the Monroe doctrine, that they wouldn't tolerate any imperialistic nonsense in their areas of interest. But capitalism is a global game, and once the USA economy had reached the level when it could compete with anyone, they wanted to do just so, but on their terms. Colonies were, for US companies, unfairly closed reservations.

The first official United States policy that assumed the conflict of interest between global capitalism and imperialism[27] was the "open door" policy, formulated by Secretary of State John Hay in September 1899 and regarding trading rights in China. The basic principle of this policy was that the United States demanded the ability to operate freely (for economical purposes) within areas controlled by other states (Figure 31). While specific, and never fully accepted by the other powers, the basic principle challenged the basic tenant of imperialism of seizing land to enjoy privileged status in exploiting it. Like the British concept of free trade that had preceded it "open door" clearly favored the ones with the most money, as most deregulation measures do, and was never meant as a fair trade policy, since the USA never planned to open their internal markets to outsiders, and could therefore rely on its huge, non-colonial, internal market.

[27] The Monroe doctrine can be constructed as a localized rejection of Imperialism, by claiming their primacy in the Western Hemisphere the United States were preventing the formation of new European Colonies there, but being localized and referring to areas that were, mostly, already post-colonial, it didn't really posed a challenge to the imperialistic geo political model .

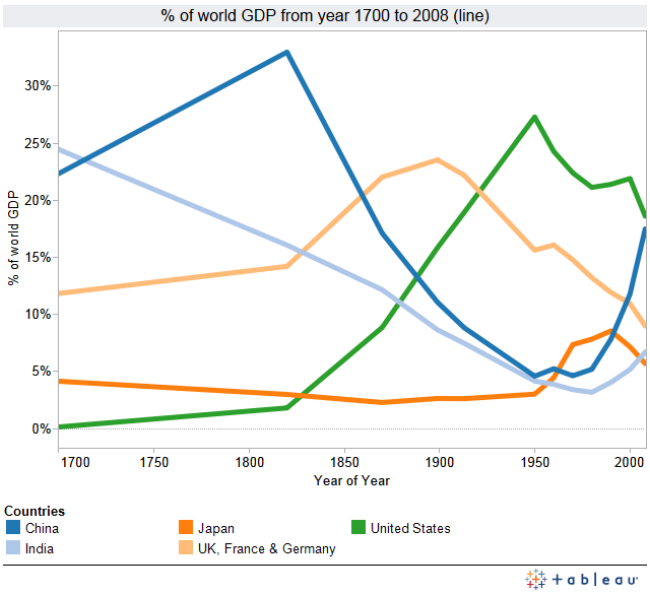

Figure 31 – A look at the evolution of the % of world GDP held by the USA Vs the main European Powers shows how the Great War marks the moment when US capitalism clearly overtook European Imperialism. The continuous decline of India during the British administration of the subcontinent is a powerful reminder of the inefficiency of the imperialistic model.

Source: https://infogram.com/share-of-world-gdp-throughout-history-1gjk92e6yjwqm16

The war created an immense opportunity for the United States. All the major economies of the world except them were at war, meaning US banks were the only place to go for large loans. This was not an option for the central powers, cut off from world trade by the effective blockade imposed by the allied navies, against which, despite all the money poured into it, the German Navy had no plan[28]. Germany and Austro-Hungary resorted therefore to exploiting its own internal resources to the limit, putting immense pressure on its population, which soon lost all comforts and came dangerously close to starvation in the winter of 1916 to 1917. Alexander Watson illustrates this perfectly when he quotes regular census that measured the height of children show that in that year children in Austria stopped growing

[28] The German Navy had essentially given up on trying to match the fighting strength of the Royal Navy before the war, the combined influence of the three big British changes of concentration of force in the Atlantic, using oil rather than coal for battleships and upping the standard caliber for battleships and battle cruisers to 15 inches being impossible to match by the Germans.

due to malnutrition This was an essential component of the allied "Grand Strategy" for the war that aimed at exhausting the central powers to the point of accepting defeat, or no longer being able to support their armies.

The Allies could sustain their war effort from imports, while maintaining the standard of life (and morale) of their civilian populations But this required hard currency, and with their economies growing weaker[29] due to a concentration on the war effort this meant asking for loans. And these loans had to follow market rules. After only a year of war Russia and France could no longer finance their war effort, and agreed to pool their gold reserves with Britain to provide a guarantee for additional loans, a situation that lasted for only another year until both countries had to agree with Britain assuming responsibility for the collective allied debt from august 1916 (in practice Britain borrowed from US banks and loaned the money to France and Russia). This was a massive financial operation and British authorities hired J. P. Morgan to manage the whole operation on behalf of the British Government. Much as the material needs of the war were of a new order of magnitude, the sums involved were huge. French National debt, for example, become more than a hundred times greater during the war, rising from 57 Million (Gold) Francs in 1914 to 5.950 Million (Gold) Francs in 1918. In early 1916 it was clear that the spending rate would not be sustainable for long, but that was the year in which the Entente hoped to win the war with a massive, concentric effort, including major offensives in all fronts that would collapse the central powers internal front. They came close to succeeding, close enough to entice Romania and Portugal to joining the war, but had to spend more than they could afford to do it, the Somme offensive alone requiring J. P. Morgan to obtain the then enormous sum of two Billion Dollars. The recent economic crises has made us impervious to the magnitude of this numbers, but in 1916 it was a huge sum. The USS Nevada Battleship cost $5,895,000, meaning that the offensive had cost as much as 330 battleships. (A present day Capital Ship, the USS Gerald Ford, costs 13 Billion dollars). As the end of the year approached, but not the end of the war, the now familiar idea that Britain's debt in the US was too big to fail become a pressing issue. There was now a risk that if Britain defaulted, that would not only mean that

[29] European Industrial production as a whole went down 23% between 1913 and 1920 while US industrial production went up 22% in the same period. German production in 1918 was 57% of what it had been in 1913, Ludendorff's total war being more a scavenging approach to economy than the efficient machine the German General wrote about in his post war texts. .

Britain, France and Russia would be bankrupt[30], but that the resulting shockwaves would seriously damage the US financial sector. This was a critical issue at a time when a US presidential campaign was taking place. In October J.-P. Morgan had approached the Wilson administration to gain reassurances from the Federal Reserve, but Wilson had responded by drafting a public statement in which the Governor of the Federal Reserve warned investors not to commit any more savings to allied loans, followed by a warning to the banks not to buy anymore allied bonds. This actions caused a crisis in Wall Street and on the value of the Pound Sterling, and naturally angered the Allied Governments, who began to suspect, with reason, that Wilson was planning to bankrupt them. J.P. Morgan and the rest of the financial sector traditionally supported the republican party, and for the 1916 election they actively supported the republican candidate[31], former New York State Governor and currently Supreme Court Judge Charles Evans Hughes, that the democrats, promptly denounced as the war candidate, and accused of being in the service of the "warmongers" of the financial sector (Figure 32).

[30] Some writers, and lots of enthusiasts on web history forums, think this would mean that Germany would automatically win the war. It didn't. It only meant that the Allies would have to fight the war by mobilizing their resources the way Germany had, with the natural sacrifices for the standard of living of the population. They would have two less years of sacrifices than the Germans, and there is no reason to think that the French or the British could not endure those sacrifices as well as the Germans did. The consequences for the French and British empires in the long term would be much harder to predict.

[31] Foreign interference in US Presidential elections is nothing new.

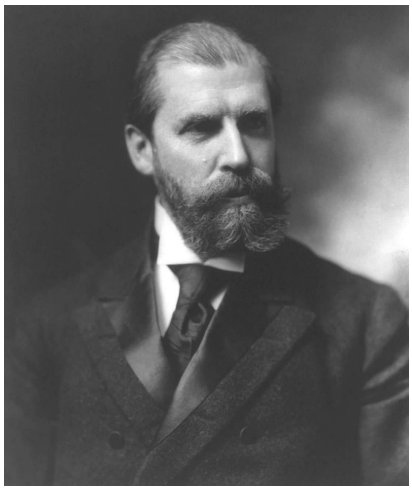

Figure 32 – Charles Evans Hughes, the republican, and "Entente" candidate in the 1916 US presidential election.
Source: https://en.wikipedia.org/wiki/United_States_presidential_election,_1916#/media/ File:Governor_Charles_Evans_Hughes.jpg

Wilson won the election by a narrow margin in the Electoral College, and 600.000 popular votes. The Entente had just suffered their biggest defeat since the start of the war. Wilson immediately move towards imposing his view, first with his "Peace Note" of the 18th of December 1916, and then most emphatically with his 22nd January 1917 speech at the US Senate were he outlined his "Peace without victory" policy. This so shocked Teddy Roosevelt that he compared Wilson's position to the "Copperhead" pro slavery faction of the Democratic Party who had proposed their own "peace without victory at the end of the civil war in an effort to maintain slavery in the south The essence of this position was an implicit affirmation of American Supremacy. The US President not only refused to choose a side, but he condemned the war as unjust, and opted for an end state that would leave all belligerents weaker than they had been in 1914, while reinforcing the position of the United States. He was seizing what he regarded as an historic opportunity, but was in fact doing it too late.

Leadership in Britain had passed from the more moderate Asquith to the far more aggressive Lloyd George. Military (and de facto) leadership in Germany had passed from the realist Falkenhayn to the Hindenburg/Ludendorff duo. The Russian empire had only a month to live. Wilson´s plan for kick starting the American century was based on the cumulative (and

mutually reinforcing) vectors of financial superiority and moral ascendency. The Russian revolution allowed Lloyd George to portray the war as being fought between democracy (the Russian provisional government being presented as the start of a new, democratic Russia) and absolutist empires, seizing the moral high ground Wilson had thought was securely in his hands (Figure 33): At about the same time (May 1917) the Central Executive Committee (CEC) of the Congress of Soviets (the other, less cosmopolitan half of the schizophrenic political situation of between the revolutions Russia ,the more "civilized" one being the provisional government) issued an appeal to "Socialists of all countries" that stated that:

"The revolutionary democratic forces of Russia do not want a separate peace, which would free the hands of the Austro-German alliance. They know that a separate peace would betray the cause of worker democracy in all countries. The forces of worker democracy would be bound hand and foot before the world of victorious imperialism (...)"

And then went on to suggest a basis for peace:

"Russia's revolutionary democratic forces want universal peace on conditions acceptable to laborers of all countries. They do not strive for annexations or plunder. Instead, they want all peoples to freely express their will and they want to reduce the power of international imperialism. Lacking ulterior motives and acting with proletarian intellect and emotion, they have adopted the formula of peace without annexations and indemnities based on the self-determination of peoples."

As a formula, peace without annexations and indemnities based on the self-determination of peoples sounds a lot better than the bleak, pessimistic "peace without victory". Wilson had been out bid by a new, unpredictable force. He also had to deal with a new threat, in the complementary appeal of the CEC to soldiers "*calling for an uprising, for a revolution by the workers and peasants of Germany and Austro-Hungary*".

Figure 33 – The Petrograd Congress of the Soviets. The world became a lot messier in March 1917.

Source: http://www.democracyinprinciple.com/blog/workers-soldiers-and-peasants-councils/

He had also been forced into war[32], the deal between the OHL and the SPD that had presented unrestricted submarine warfare as the key to victory had, while preventing social disruption in the German Empire, made war with the United States inevitable, especially when coupled with the idiotic blunder of the Zimmermann Telegram. Now committed to an allied victory in the war, Wilson had to find a way to regain control that led to the desired end state of American primacy. The financial weapon of debt would still guarantee that each of the victorious nations (Except Japan, who was in strong financial position and in 1916 even loaned money to the Entente) would be weakened by the necessary payments to US banks that would in turn strengthen the US economy, but could no longer be used to dictate peace terms that would impose a reshaping of European power dynamics. Wilson now had to present a new peace formula, and use another weapon, implicit in CEC formula. By discarding the without annexations and indemnities

[32] The formal note notifying the U.S. state Department that the German Navy was going to implement unrestricted submarine warfare was only handed to Secretary Lansing on the 31st of January by Ambassador Bernstorff, the decision to implement it had been taken in the 9th of January and the submarines were already deploying as Winston made his speech.

condition and without any explicit reference to self-determination as the basis for peace Wilson unleashed the nationalities question.

But while all this had been happening the United States had also been the principal beneficiary of an irresistible process that would greatly strengthen its global power. The Great War was making the world addicted to oil.

Before the war the world moved by coal. The change to oil begun with the major navies, oil becoming standard for smaller ships. The first major Navy to take the step of building capital ships powered only by oil was the US Navy with the Nevada class Battleships, followed closely by the Royal Navy with the Queen Elizabeth class battleships. The logistic needs of the war meant that all armies who could do it greatly expanded their motor vehicle fleets. After the war there where tens of thousands of relatively new trucks that could join the transportation market as military surplus, but the main factor was that production capability had expanded enormously making motor vehicles affordable, while ex-soldiers returning to civilian life had become familiar with them (Figure 34).

Figure 34 – A US made "liberty" truck of the type issued to the Entente forces in large numbers. After the war military surplus trucks such as this one expanded the transport industry and a huge number of trained drivers and mechanics entered the workforce.
Source: http://www.talkingproud.us/Military/WWIVets/files/libertytruck.jpg

At the same time the war had killed a large percentage of the horses used for transport in Europe, creating a vast mobility deficit that could only be met by adopting motor vehicles. The ongoing debate on the comparative merits if electrical vs gasoline powered vehicles was also settled by the war in

favor of gasoline power. The war also greatly expanded the development of diesel engines that were ideal for submarines, and proved ideal for locomotives. Air transport also become a reality, and after the war expanded rapidly (Figure 35).

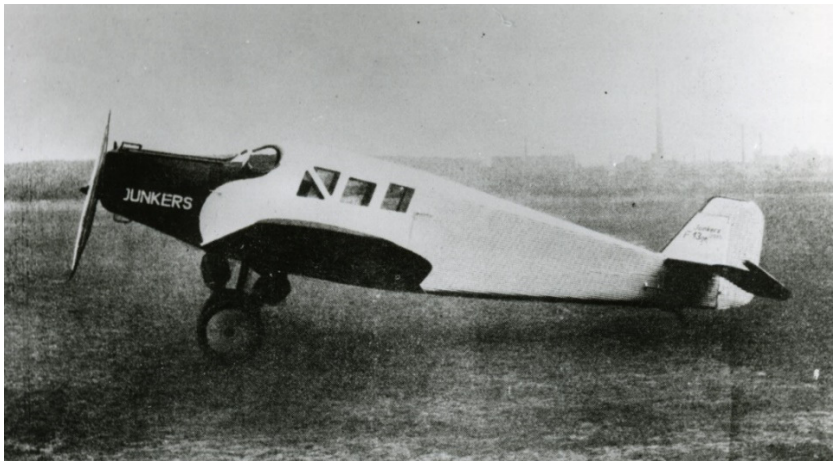

Figure 35 – The Junkers F-13, introduced in 1919, was the world's first all metal passenger aircraft. An excellent design, it was one of the aircraft that made air travel a popular option.
Source: http://www.junkers.de/sites/default/files/media/f13_ABJ_590_J13_007.jpg

If oil was now the preferred fuel for the world economy, it was absolutely essential for the modernized late war armed forces, and would be even more critical for the increasingly mechanized forces that developed after the war. Clemenceau said in 1918 that "A drop of oil is now as valuable to nations and to peoples as a drop of blood" At the end of the war the German Air Force had fuel for only sixty days of operations and the German submarine force for only thirty days But while coal had been widely spread and most Great Powers were self-reliant for their coal needs, oil in 1918 was essentially a US product. If, as Lord Curzon famously said the allies sailed to victory in a sea of oil, 97% of it was supplied by the United States.

The United States were, by very far, the world's greatest oil producer and that gave them tremendous leverage on political crisis that was to be amply demonstrated in World War Two, when a US oil boycott forced Japan into an unwinnable war, or by the debilitating limitations Italian Armed Forces faced as a result of national oil stocks having been depleted by the

consequences of international sanctions that had been imposed because of the Abyssinian war and that had weakened the Italian economy.

Other nations tried, very hard and sometimes with a large geopolitical price, to gain access to oil, but nature just favored the United States. In 1939 the USA still produced 61% of all the world oil, and if we count Mexico and Venezuela along with them, these three nations controlled 74% of the global production. And like all addicts, the world's appetite for oil kept growing. In 1918 each US soldier required 1,2Kg of oil based fuel each day (8% of the weight of a soldiers daily needs). In 1945 this had grown to 33,5Kg, or 50% of his daily supplies weight.

In the Great War, the two most powerful instruments of power projection for the United States were not the branches of the Armed Forces but Wall Street and the Oil Industry. The world of 1914 had measured the power of nations by the size of their empires, the number of their battleships or the steel they produced. After the war the two great power indicators were money and oil, and the USA had control of both (Figures 36 and 37).

Figure 36 – A Texas Oil field. The USA had control of the world oil market during the Great War and dominated it until the 1950s.

Source: http://www.esri.com/news/arcwatch/0209/graphics/anadarko1-lg.jpg

Figure 37 – The first Ford built as a Coca-Cola delivery van in 1921. Motor transport transformed the economy and made it increasingly reliant on oil. People everywhere could now have a U.S. drink that had been delivered by vehicles powered with U.S. oil.
Source: http://www.vintag.es/2014/12/vintage-ford-coca-cola-delivery-rucks.html

U.S. Financial power, fully committed to the allied cause after the entry into the war, was to be one of the main forces driving the allies to victory. It would also, after the war, leave the United States in a dominant position, since the losers would soon, through the impositions of indemnities to be paid, join the winners in being massively in debt to American Financial Institutions[33]. This position of strength was to be demonstrated when the United States managed to secure a naval armaments limitations treaty, the Washington Naval Treaty that gave the U.S. Navy its long term goal of being second to none and is clearly shown in the figures bellow, quoted from Adam Tooze "The Deluge" (like most figures in this chapter). All figures are in Billions of Dollars.

	Germany	Great Britain	France	Italy	USA
Total National Wealth	75.0	75.0	60.0	20.0	250.0
Annual National income Pre War	10.0	11.0	7.0	3.0	40.0
Government debt before the war	1.2	3.5	6.6	2.9	1
Government debt after the war	40.0	40.0	28.0	12.0	23.0

For the Allied European powers the cost of victory was extremely high and the financial unbalance was to be one of the critical factors in what Carr

[33] Keynes points out that France owed its allies after victory four times more than what it had been forced to Pay Germany after the 1870 war.

called the "Twenty Year Crisis" that was to end in World War Two. This explains why the Treaty of Versailles gave so much importance to the issues of reparations and payment plans. Keynes argued that it would have been better for the Allies to fight, as Germany did, by mobilizing their own resources rather than relying so much on loans. This makes economic sense, but must be weighed against the drastic political changes that were to be experienced in the countries whose populations had to endure "Total War" economics. Whatever the causes the financial unipolar world order was to have only ten years of stability before the 1929 financial crisis drastically shook it, reducing U.S. influence and facilitating the road to another World War. Only Japan came out of the war without a crippling debt, but was to to be forced into massive loans at a heavy 6,5% rate to pay for reconstruction after the devastating 1923 earthquake that killed 140.000 people; leaving the Japanese with a legitimate complain of a total lack of solidarity between former allies.

The United States general attitude to debt in the post war years did little to defuse political tensions and economic risks, until in 1933. The Europeans, starting with Hitler's Germany but soon including France and Britain simply stopped paying. In the end only Finland paid its American debt in full.

2. WEAPONIZING THE MAP OF THE WORLD

> "*I never could stomach these nationalists. The destiny of Man is to unite, not to divide. If you keep on dividing you end up as a collection of monkeys throwing nuts at each other from separate trees*"
> Merlyn advising Arthur in T. H. White's "The once and future king".

We generally quote the Treaty of the Westefalia of 1648 as the birth of the Nation State and therefore of the current global political system. This is not quite true. The states that came out of the massive turmoil of the Thirty Years War had many of the attributes of the modern Nation States, but a common national identity was not one of them. Europe, with a few lucky exceptions, such as Portugal, was made of multinational states, whose borders were defined by monarchical heritage rules, force of arms or in a few happy exceptions natural obstacles such as mountains or large rivers. The idea that national identities should be the defining factor in the formation of states only really become dominant with the Great War, with all of the attending, and expected, potential for conflict.

In 2017, on the centenary of the entry of the United States into the war and close to the centenary of the formulation of Wilson's fourteen points (January 1918), the classical European view of Wilson as an idealist will certainly be heavily featured on published works, probably less so in the United States where the current political climate will mean that any discussion on Wilson will focus on his alleged racism and proximity to white supremacist ideals[34] (Figure 38). From a European point of view, what was less understood about Wilson (and is often forgotten now) was that he was also an American Supremacist, believing that the United States should enjoy a position of dominance over the world.

[34] Having successfully courted the black vote to win his first presidency, Wilson promptly fired thirteen out of fifteen African Americans in leading federal positions, refused to appoint black ambassadors to countries were US ambassadors were traditionally black, and allowed his subordinates to implement racist measures, such as firing all black civil servants in some departments, or introducing segregation (separated bathrooms, eating areas, etc.) in federal agencies in Washington, ending the capitals tradition of being the most integrated part of the USA. In 2016 there was a petition from black students to remove Wilson's name from the Princeton University Public Policy School.

Figure 38 - D.W. Griffith's "The birth of a nation", was the first film to be viewed at the White House, in 1915, during Wilson's presidency. A distorted and racist retelling of the post-civil war reconstruction of the South, the movie is generally credited with fomenting the "second rise" of the KKK. The National Association for the Advancement of Colored People (NAACP) was protesting very actively against the film at the time. From a purely cinematic point of view, it was a ground breaking tour the force from a gifted author, in an unavoidable parallel with Leni Riefenstahl 1935 "The triumph of the will".
Source: https://upload.wikimedia.org/wikipedia/commons/c/c2/Birth-of-a-nation-poster-color.jpg

Wilson was, of course, not just the liberal idealist portrayed in most histories of the War, but a skilled political operative who had overcome the traditional prejudice against southern politicians to become the first southern president after the civil war. He embraced the nationalities principle by the same reasons the international revolutionary movements had. It was a powerful anti-imperialist tool, and one with the potential to reduce the possibility of really large land powers with the capability to challenge the United States forming in Europe (Figures 39 and 40). Russia would be pushed back by the independence of Poland, Finland and, potentially, Ukraine, the Baltic countries and all other nationalities it contained, while Germany would be slightly reduced and the Austro Hungarian and Ottoman Empires would break apart.

Figure 39 – Europe in 1914.
Source: http://www.worldology.com/Europe/world_war_1.htm

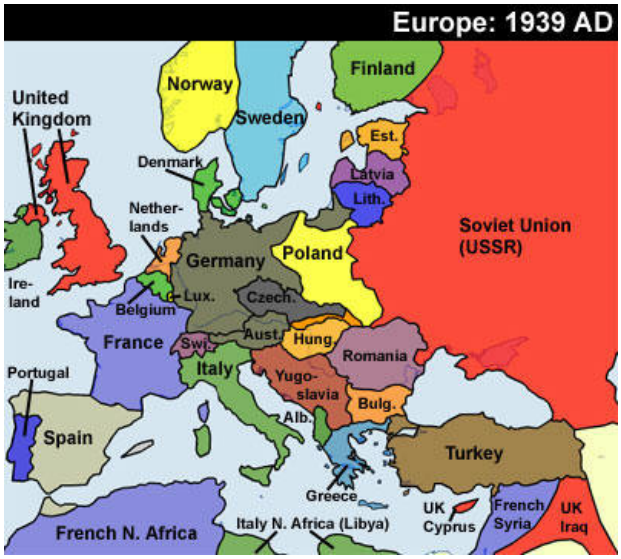

Figure 40 – Europe just before the Second World War. The downsizing of the former empires is clear. It is also clear just how much Hungary was the biggest "looser" in the Great War.
Source: http://www.worldology.com/Europe/interwar.htm

As we have seen, the self-determination issue, that legitimized nationalism, had been first introduced by the Central Executive Committee and nationalism was to be a main factor in Wilson's fourteen points, but national and religious identities had been exploited by both sides since the start of the war.

The German Foreign Office had long cultivated a special relationship with Ottoman Empire, working closely with the Kaiser to present him as a friend of the muslins. The most emblematic project of this cooperation was the Berlin-Baghdad express, a railway line that would greatly improve the mobility within the empire and present a land route to counter British naval superiority (during the war the Central Powers would use interior lines of communication by rail to counter the allies use of naval superiority whenever the allies opened new fronts.) This was totally opposed to the Bismarck principle that the whole Orient should not be a concern of Germany's foreign policy.

The Leading operative in the German efforts to start a global Jihad against the Entente powers was Max von Oppenheim, who studied Arab culture before joining the German Diplomatic (But not as a career diplomat, he was Jewish and as such not eligible. That didn't prevent him from supporting the Nazis later in his life, having renounced Judaism early on) service and starting to foment anti British activities in Egypt. (He wrote in 1906 that "the demographic strength of Islamic lands will one day have a great significance for European States). In Egypt he recruited fellow scholar Curt Prüfer, and the two of them were to figure prominently in the German Islamic schemes (Figure 41).

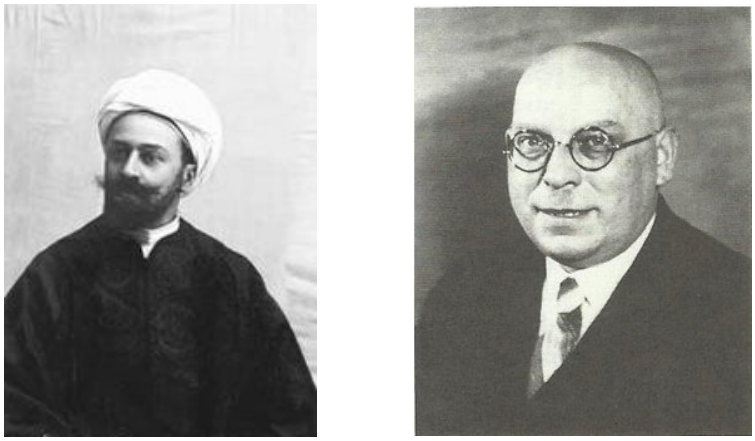

Figure 41 – Max von Oppenheim (in Arab dress) and Curt Max Prüfer were the two main operatives of the German attempts to use Islam against the Allies.
Source: https://upload.wikimedia.org/wikipedia/en/f/f7/Max_von_Oppenheim.jpg

The Germans did managed to obtain a declaration of Holly War from the Ottomans, a dangerously open-ended one that incited to the killing of infidel civilians. This proved useless in fomenting rebellion in the British and French Empires, but helped create a climate of potential violence against the Christian and Jewish minorities of the Ottoman Empire, and certainly played a part in the Armenian genocides (and of other minorities in the Empire, mainly Christian Assyrians/Syrians/Chaldeans and Greeks) and in the numerous incidents against other non-Muslim populations (and European civilians) predisposing these communities to cooperate with the Allies and contributing to the legacy of inter religious conflict in the region. The German Foreign Office also took part in actively distributing anti-Christian propaganda in the Ottoman Empire.

German agents tried to foment Jihad in Abyssinia, Somalia, Eritrea, Sudan, The Arabian Peninsula, Iraq and Afghanistan, while also trying to exploit the Shia/Sunni divide with a mission to Karbala. They were generally unsuccessful but recent history seems to indicate they went to all the right places.

This German attempt to weaponize jihad, despite how little it accomplished at the time, is interesting on three accounts from an historic perspective:

– First, because once they realized that "institutional" Islam was not working, they reached out to more radical, fringe groups, exploring the perspective, whether deliberately or not, that radical Islam posed a potential threat to the British and French empires, in the process interacting with the precursors of some of the groups currently involved in the resurgence of radical Islam;

– Second because it represented an attempt to start a movement that would, if it had worked, posed an existential threat to the British Empire, displaying an "anything goes" attitude in the German Foreign Office as early as 1914, at a time when victory through conventional means still seemed possible. This indicates that the German Foreign Office saw Britain as the main enemy and was seeking total victory, not just an advantageous peace, even if it meant dramatically changing the world order.

– Third, because some of the operatives of the scheme were to rise within the Nazi party, and Germany would try again, but in a much more limited way, to play the Islamic card in World War Two, again without much success. By mid-1943 Curt Max Prüfer he had returned to the Reich and was promoted to head of the Oriental Department of the Ministry of Foreign Affairs, in which capacity he directly oversaw the cooperation with Grand Mufti of Jerusalem Haj Amin al-Husseini. From a military point of view, the

most relevant effort was the creation of Islamic forces to fight alongside the Axis in the eastern front, and this only led to a few SS Muslin units of very limited combat value that were used in anti-partisan operations

The Germans also tried to start a Jewish revolt in Russia, approaching leading Zionists and preparing propaganda. This initiative's was not effective with Jewish communities, but unfortunately contributed to the general paranoia against Jews in Eastern Europe, and Jewish communities were to be violently persecuted by both sides in the battle zones of the eastern front, and leaving a legacy of anti-Semitic paranoia that was to be tragically exploited during World War Two.

Ludendorff had already started a massive state building experience crating a military run artificial state in the occupied regions of North Eastern Europe, the Ober Ost, complete with a reeducation program that anticipated the Nazi ambitions of eastern expansion of two decades later, in another example of how far elements within Imperial Germany were willing to go, not just to win the war but in their attempts to shape the post war reality.

The most famous of the German experiments with fomenting revolutions also started as a Foreign Affairs initiative, although it's normally credited to Ludendorff. This was the famous sealed train that took Lenin to Russia. The idea started with the same group within the German foreign ministry that had already supported the Irish nationalists and was approved by recently appointed foreign minister Arthur Zimmermann, famous telegram writer and an enthusiast for covert operations. The Minister then asked for the military to assist in providing safe passage from Switzerland to Russia for Lenin and his hardcore group in the hope that they could pressure the Russian Provisional Government into peace, or at least reduce their effectiveness at waging war. This is arguably the most influential covert operation in history[35], since it's hard to imagine the Bolsheviks seizing power without Lenin, no matter how much we subscribe to Tolstoy's classic argument that individuals are irrelevant in history.

Once the Bolsheviks were in power OHL cooperated with a number of national movements within the disintegrating former Russian Empire, becoming seriously involved in the expanding civil war, with various degrees of success, from the Ukraine to Finland.

[35] And one that could have involved the US. Before boarding the train Lenin telephoned the US embassy in Bern, but the official who answered the call had a tennis match to play and told him to call back after the weekend. That official was called Allen Dulles and was later to be the head of the CIA.

The Germans were not the only ones using nationalism and religion, the British and French doing it, with a lot more immediate success (at the cost of planting the seeds of a lot of long term problems), with Arab nationalism.

After a series of failures in the Mediterranean Theatre of Operations, by 1916 the Allies were ready to try a more unconventional approach in the Middle East. The British had been following signs of unrest within the Ottoman controlled Arab regions for a long time. This ranged from the Ahad society in Iraq (based on Iraqi officers within the Ottoman forces), the al-Fatad society in Syria[36] (mostly urban middle and upper class) to more tribally based movements such as the Hashemite clan in Hejaz (Arabia) or religious based, such as the fanatical Wahabi sect lead by ibn Saud. Before the war the Hashemite leader, Sharif Hussein ibn Ali, who as the leader of the Holy city of Mecca and claiming direct descent from the prophet had great aspirations for regional dominance, had sent his son, the Emir ibn Hussein to Cairo to approach Kitchener on the possibility of British support for an Arab rebellion. As the leading expert in non-conventional warfare of the age, Lord Kitchener of Khartoum registered the idea for future use, and through the difficult times of 1915 discreet channels of communication were kept open with the Arab leaders through Red Sea ports. When in June 1916 the Hashemite leadership, become aware that the Ottomans were planning to have them replaced by the rival, and more malleable, Zaid clan, they launched a rebellion, and the Allies, seeing a military opportunity, seized it.

Both the British and the French were fortunate in having at their service a number of exceptionally talented officers who served as advisers to the Arab rebel forces (Figure 42). The one we all know of is the then Lieutenant Thomas Edward Lawrence, who wrote the definitive book on the rebellion, and went on to inspire a much admired film. But there were lots of others, like, on the British side, Colonels Cyril Wilson, Pierce C. Joyce and Francis Newcomb and the "explosives expert" Lieutenant H. Garland, and on the French side experts on colonial warfare like Colonel Brémond, muslin officers like Colonel Cadi and Captain Raho and Captain Pisani who lead the engineers during the anti-railway campaign.

[36] Both of which a far greater proximity to Western points of view than the religious and tribal leaders the Allies ended up supporting.

Figure 42 – Emir Feisal's negotiating team in Paris in 1919. Captain Pisani (directly behind Feisal) and COL T. E. Lawrence (second from right) stand behind the Emir
Source: IWM Q55481, pulled from Wikipedia images

Despite the romantic image that endures, the Arab revolt was successful because the natural qualities of the Arab warriors, mobility, endurance and aggressiveness were complemented by the use of modern weapons, such as new and specially developed explosive devices , and communications, and supported by armored cars as well as dedicated, and well-coordinated, air support. The revolt was, in fact, a proto "Tech Guerrilla". The most recent parallel would be the actions of local forces, assisted by North American Special Forces teams, and benefiting from air support, in the overthrowing of the Taliban in Afghanistan.

The revolt evolved in four main stages. The first was to gain control over a number of ports in the Red Sea Cost. Feisal's rebel Army, advised by Lawrence and supported by the Royal Navy, completed this phase with the capture of Wejh in January 1917. From this coastal sanctuary Lawrence launched a campaign to interdict the Hejaz Railway, first by blowing up tracks of the line, then by blowing up locomotives using contact mines. Lead by Raho north of Medina, this effort isolated the Turkish forces in Medina and from July was integrated with Royal Flying Corps attacks that delayed repairs.

The next stage was the expansion of the revolt to the Sinai after the daring desert march to seize Aqaba, the coastal town being turned into a

base for in depth raids against Turkish communications lines and rear areas, using armored cars and supported by the RFC. The final phase was to take place in Palestine and Syria, and to consist of larger scale operations in support of Allenby's offensive.

The Arabs were to secure some spectacular successes, and did a lot of damage to the Ottoman war effort, in particular by their actions against rail communications. Towards the end of the campaign their actions were brilliantly integrated into Allenby planning in an early form of in depth operations. But they fought for an independence in terms that the British and French governments never intended to allow them, having decided in February 1916 on a partition of the Ottoman Empire among themselves in the Sykes-Picot agreement.

At the end of the campaign the allies could regard the revolt as a military success, but for the rebels it was to be a political defeat. All across the Middle East the Arabs had taken up arms on behalf of a diversity of political, ethnic and religious causes. A century later, they haven't put them down yet.

While the Arab Recolt was unfolding, the situation in Europe had changed drastically. In the same way that "Peace without victory" was largely forgotten due to U.S. entry in the war, the role of the Executive Committee in putting self-determination on the "road-map" to peace was largely forgotten once the Bolsheviks took power[37] and his now viewed mostly form the point of view of Wilson's fourteen points. (Given the importance of this document, it is reproduced in Annex A.)

At the time, and despite Ludendorff plans for offensive operations, the indicators of an allied victory were clear. The Austro-Hungarian Empire was on its death throes, the Ottoman wasn't much better, both running out of reserves, internal cohesion and resources, and the declaration should be seen as an imposition of a new world order, one shaped to the interest of an increasingly dominant United States. It is worthy of note that this was the third clearly unipolar moment in Wilson's approach to world policy. The first was when his government was asked to provide assurances for the allied war debt, in other words, to provide a guarantee that the allies would win the war. The second was the "Peace without victory" speech, in which he told the belligerents how they should end a war the USA wasn't even in at the time.

[37] But was very influential at the time. By 1918 the Italians were actively distributing pro nationality propaganda targeting the appropriate contingents of the Austro-Hungarian army

After an introduction that was to fuel his image as an idealist, denouncing secret covenants of the type recently exposed by the Bolsheviks[38] in the November 23rd (of 1917) issues of Pravda and Izvestia and reprinted left wing newspapers like the Manchester Guardian and making general considerations about world peace, Wilson laid out a road map for the new world order.

Points 2 and 3 reinstated the "open door" policy, now on global terms presented as freedom of navigation and removal of economic barriers, while point 4 advocated disbarment, making the previous points easier to implement.

Point 5 legitimized colonialism under the principle "*the interests of the populations concerned must have equal weight with the equitable claims of the government whose title is to be determined*", in other words, the old condescending western view idea that colonial rule was benign if it was in the claimed interest of the native populations, whose right to self- determination was never considered (the document doesn't really defend self-determination and when it hints at national rights it is only for white populations).

Points 6 to 13 indicate the fate of several nations, proposing normalization of relations with Russia, then in opening stages of its civil war (no consideration is given to the rights of any part of the former Russian empire except Poland, and the text was clearly written expecting Bolshevik power to be either short lived or to evolve into a benign form, in both cases seriously underestimating Lenin). It also proposes a fairly obvious return to Belgian independence, awards France Alsace-Lorraine and Italy the possibility of absorbing Italian speaking areas along its border, in both cases without the slightest concern about self-determination. The peoples of Austria-Hungary are accorded *"the freest opportunity to an autonomous development*" with the provision that "*the relations of the several Balkan states to one another determined by friendly counsel along historically established lines of allegiance and nationality*" two points which taken together are a recipe for chaos in the Balkans, while the Ottoman Empire is pronounced dead, "*the other nationalities which are now under Turkish rule should be assured an undoubted security of life and an absolutely unmolested opportunity of autonomous development*" autonomous being of course not exactly the same as independent.

Point 14 is the one everyone remembers and suggests "*a general association of nations must be formed under specific covenants for the purpose of affording mutual guarantees of political independence and territorial in-*

[38] The Bolsheviks were unware of other "covenants" like the deals made by Standard Oil with the Ottoman government to secure oil rights in the Middle East.

tegrity to great and small states alike" which would, of course, become the League of Nations.

The document concludes with an open invitation for Germany to accept peace negotiations, clearly regarding the German Empire as the only real opposing power, the Austro-Hungarian and Ottoman Empires being treated as having been already defeated. This was essentially true, but never the less a fairly blunt diplomatic statement towards what up until recently had been Great Powers.

The fourteen point's most relevant message is the emphasis of nationality as the basis for legitimacy, opening the door for the fragmentation of existing empires into smaller nation states, but making no clear provision for self-determination. This is particularly clear in the case of Alsace-Lorraine, where the possibility of a plebiscite is never mentioned, or in the provision that the Italian border must be redefined "*along clearly recognizable lines of nationality*".

The document could have provided a basis for a reasonable peace, much more than Wilson's initial "peace without victory" concept. That would however require reasonable leaders, and Ludendorff still believed that the war could be won, and managed to persuade the leaders of the other countries of the Quadruple Alliance (The Austro-Hungarian Empire, The Ottoman Empire[39] and Bulgaria) to go all for nothing with a separate peace in the East.

The treaty that was forced on the Bolsheviks at Brest-Litovsk on the 3rd of March, 1918 was an ominous document[40], not only because it perpetuated the logic of annexations that had characterized European Warfare for centuries, but mostly because it did so within the logic of Ludendorff's socio-political experiments in Ober Ost, that were to be very influential in the worst possible way in German political circles after the war.

It was also an extremely futile document, from which, in the course of an year, the only ones that got what they wanted were the Bolsheviks, who just wanted to stop having to fight a war with Germany so they could concentrate in winning the civil war and had no intention of honoring the treaty they made of point of signing with as little ceremony as possible. They never intended for the loss of territory to be permanent, Trotsky probably believing that worldwide (or at least Continental European wide) revolution was about

[39] The terms of the fourteen points were so drastic for the two Empires that they must of felt they had little to lose. In fact Turkey managed to secure better peace terms, but only after a few more years of fighting.
[40] Reproduced on Annex B

to come and make borders obsolete, while Lenin was perfectly aware that he had to win one war at a time.

Any German fantasies of using Eastern Europe as a base for generating the resources to feed the war in the West were soon proved wrong[41], the whole region being caught in the early stages of the Russian Civil War (Figure 43), and the troops moved to the West (while still having to leave one million men in the East to deal with the post Brest-Litovsk mess, including a stabilization attempt in Ukraine that soon turned into an occupation and military operations in Finland) proved unable to change the course of the war.

Figure 43 – The Russian Civil War in Europe. The communists had to fight hard to pull back the regions that the "centrifugal forces" of nationalism had pulled away from Russia. The same forces are still at work, and causing conflicts, in the old battlefields of the civil war, including the current conflict in Ukraine.

Source: http://fc.greensboroday.org/~ldrewiczewing/RussianCivilWar.JP

[41] The food supplies from the Ukraine were only 17% of what the Central Powers had estimated, and badly needed. The now independent Ukraine was not going to starve for Germany, despite increasing German military pressure.

The situation was even more delusional for the Ottomans, who moved forces to the East to try and seize as much territory as possible (their goal being a return to the 1870 border), sometimes in direct competition with the Germans, when they were about to face the British offensives in Palestine and Iraq.

The Treaty was soon made obsolete by the end of the war and the Bolsheviks victory but was, among other things, to leave a lasting mistrust between Russia and Ukraine, who was briefly independent within the terms of the treaty.

The final area in which nationalism become increasingly dominant was in the relations between the Imperial powers and their dominions.

Britain had faced a first challenge with the suicidal rebellion of the Irish nationalists in April 1916 that was suppressed but left a legacy of violence that was to make British control of Ireland unsustainable in the long term. In 1918, when the British wanted to extend mobilization to Ireland, the British government was forced, after a discreet consultation with the U.S. presidency (in another clear sign that the world was increasingly unipolar) conducted through Wilson's trusted aide Colonel House (Figure 44), to concede Home Rule.

Figure 44 - President Wilson (Left) with Colonel House. The Colonel (a Texas honorary title, House was not a military officer) was Wilson's "behind the scenes" man for foreign policy. While opposing "secret covenants" of the Sykes-Picot type, Wilson was not averse to discreet diplomacy, but unlike Mark Sykes, Edward House was an experienced political operative who knew how to get results without leaving a paper trail.
Source: https://firstworldwarhiddenhistory.files.wordpress.com/2014/11/house-and-wilson-2.jpg

British legitimacy was also challenged in India, where for the first time the National Congress and the Muslin League were united in demanding constitutional change, removing the traditional British argument of protect-

ing the Muslim minority. Indian nationalism soon become a mass movement, reinforced by the fact that India was supporting the British War effort at a large human and economic cost. Globally the war reinforced nationalism and despite Britain and France's efforts to retain, and even expand, their empires, the tide had turned for good against Imperialism and Colonial rule was running on borrowed time.

For decision makers on all sides nationalism was dangerous because it brought an irrational element to war. Once it had been possible to start and end war according to a cost versus benefit basis. Silesia was only worth so much for Austria, to give an obvious historical example. The near sacred nature of the nationalistic imperative made such calculations impossible and war "to the knife" became the norm. This had already happened in South America, where national identities had consolidated rapidly, leading to wars that were often irrational and ferociously bloody, as when Paraguay fought desperately against the overwhelming superiority of an alliance of Argentina, Brazil and Uruguay, the war ending only when there were only 221.000 people left alive (of which only 28.000 men) in Paraguay from an initial population of 525.000.

It was nationalism that brought back to European war an intensity that hadn't been seen since the religious wars of the seventeen century, and the violent passions unleashed during the Great War were to make subsequent wars much more violent to civilian populations, starting with the Russian Civil War and climaxing with the Second World War.

Nationalism can be a stabilizing factor when two clearly segregated nationalities stand on opposite sides of a natural obstacle, but centuries of empires had left the nationalities of Europe dangerously overlapping turning the post 1923 map of the Old Continent into a quilt of flash points.

Wilson's fourteen point become the basis for the armistice, but were not to lay down the basis for lasting peace. The danger created by the fragmentation of Eastern Europe led to intensive diplomatic efforts, such as the Locarno Treaties, that were to culminate in the 1928 Kellogg-Briand pact whose signatories rejected war, an idealistic document that failed spectacularly to prevent World War Two but is now being credited as being at the roots of the general modern perception of war as unlawful, as George W. Bush found out in 2003. Twenty years after Versailles the world would again be at war, this time with the added fury of nationalism. The next war would no longer be just a war of armies, but a war of peoples, with all the added human cost.

3. WEAPONIZING POLITICS

The emergence of a new world order was bound to generate ideological responses. Until the war the default ideology in Europe had been imperialism, either in right wing or liberal form, the French republicans proving as willing to conquer and exploit colonies as the more right wing of the German monarchic Weltpolitik enthusiasts. Wars are sometimes conflicts between political/social models as well as between states. In World War Two three different models, communism, fascism (itself in many different varieties) and democracy (again in many different varieties) fought in two opposing camps, the defeat of the Axis powers wiping Fascism from the politically acceptable options list of history. In World War One there was a similar conflict between models, but the camps were not so neatly organized, with countries fighting on opposite alliances actually fighting for the same imperialist model, while global capitalism was represented essentially by the United States (and the South American States the USA brought with them) and Communism was a late entry into the conflict, when the Russian Civil War merged with the end of the Great War.

The dual triumph of North American "open door" capitalism on the world economy and of the communist victory in the Russian Civil War had brought about new challenges that could either be ignored by traditionalist politicians that still believed in the greatness of the British (or French) Empire or accepted as a challenge. Traditional politicians would generally radicalize their positions, particularly in the United States where the end of the war, and a perceived "red threat" brought about an extremely hard response against the demands of unionized workers, while at the same time the demands for equality from African-Americans where met with an increasingly racist response. This was most felt in the South of the United States, were the defeated Democratic Party was very close with the reinvigorated Klan. Nontraditional politicians would recognize the new world order as what it was, a unipolar moment of US supremacy, and try to devise new ideas to face it, accepting the challenge that is implicit in any unipolar moment. The two most extreme responses were Lenin's new brand of communism and Hitler's Nacional Socialism.

Electrified Socialism

For a while socialism seemed to have a chance of gaining power in a number of European Nations. There was an attempt at revolution in Germany that was defeated by a vigorous response from the conservative sectors of society that didn't hesitate to take up arms, the revolution being suppressed not directly by citizen militias and "freikorps" forces. In Hungary the Reds managed to raise a 200.000 strong revolutionary army but were defeat by a Romanian intervention. The Polish/Ukrainian forces were pushed out of Kiev by the Red Army that could count both with veterans like Brusilov and new (red) stars like Tukhachevsky, the Polish and Ukrainian threat giving the Communists an unexpected patriotical appeal for conservative Russians. For a brief moment in August Tukhachevsy was 150 miles from Berlin, but poor coordination between the two wings of the Red Army allowed a Polish victory in the last great Cavalry campaign in history. Having failed to export revolution in Europe wherever it faced resistance from a consolidated middle class, communism took the fight to China, where it gained strength in the early 1920s until being smashed by the nationalist in 1927.

Lenin understood early on that the same changes that had made the communist triumph in Russia possible also made the traditional socialist dreams of world revolution impossible. This was not just the result of the new capitalist world order, nor of a greater than expected resilience traditional states, but of the unexpected discovery that the bourgeoisie could fight. The Soviets soon demonstrated they were themselves experts at suppressing attempted revolutions, as they progressively wiped out all political or nationalist movements attempting to avoid incorporations in the Soviet Union in what were to become Soviet Republics. The old Marxist ideal of revolution spreading among imperialist states to create a world without borders had been rendered obsolete. Imperialism had been destroyed, not by socialism, but by capitalism, and the new world order was a much tougher opponent. Nationalist right wing governments had proved quite capable of containing revolution everywhere but in the Soviet Union, and the world's only socialist state would have to prepare not for an imminent global revolution, but for decades of isolated struggle. Lenin's maxim that communism is soviet power plus the electrification of the whole country was both the core of the first Five Year plan of 1920 and symbolic of the new vision that in order to first survive and latter prevail the USSR needed to become a peer competitor with the United States. This focus on the endgame would be maintained through the

whole history of the Soviet Union, and is best summarized as a quest for bipolarity. The commitment to creating a "second to none" industrial power base and an immense Army (the most sited statistic is that In the late 30s the Soviet Union had more tanks than the rest of the world combined) at the cost of sacrificing the quality of life of its citizens was rooted in an early understanding of the super power concept born at a time when the USA were the sole superpower. It also represented a rethinking of the struggle against capitalism away from traditional revolutionary concepts and towards war. The slogan for the new breed of Marxists was no longer "workers of all countries, unite" but "Soldiers of the Red Army, get ready"

Lenin´s ideas are often so ahead of his time that they can only be understood with hindsight. The post-civil war focus on super state building can only be understood in the context of a bipolar power struggle. In a sense, the GOELRO[42] plan was the first act of the cold war, three decades before it had even started.

This was a drastic option because the USSR was competing against a much more efficient economy, the US having not only a greater GDP per capita but a much faster growing one, as the chart (Figures 45 and 46) shows.

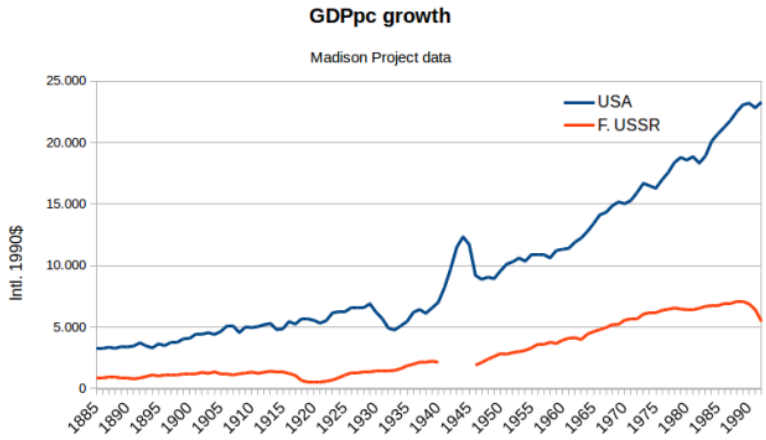

Figure 45 – Comparative evolution of GDP per capita of the USSR and the USA.
Source: https://nintil.com/2016/03/26/the-soviet-union-gdp-growth/

[42] "GOELRO was the first-ever Soviet plan for national economic recovery and development. It became the prototype for subsequent Five-Year Plans drafted by Gosplan. GOELRO is the transliteration of the Russian abbreviation for "State Commission for Electrification of Russia" (from Wikipedia)

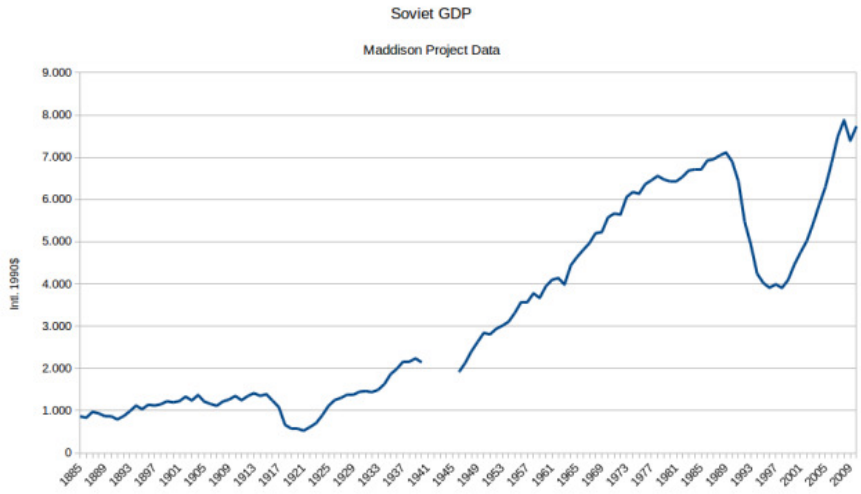

Figure 46 – Evolution of the GDP of the USRR. After the drop of the 1914/1921 years, the steady growth should have allowed for a marked increase in living standard, as in Western Europe. It didn't, all resources being concentrated on reaching and maintaining superpower status.

Source: https://nintil.com/2016/03/26/the-soviet-union-gdp-growth/

This was to remain a characteristic of the Soviet Planned economy, with priority always being allocated to developing industrial capability and military power (Figure 47), with standards of living being neglected. Gore Vidal's well known maxim that the USSR was "Alto-Volta with rockets" could have been formulated in the late 30s has "Alto-Volta with tanks" It is useful to consider that when the battle of France started in May 1940 each side had roughly 2.000 tanks. The Soviet Union at that time had about 10.000, and their tanks were actually better than the majority of those fielded by the German or Allied armies. And Stalin was at the time planning a vast naval program to build a navy comparable to the United States Navy.

Figure 47 – Lenin towering above the Soviet Armed Forces, a propaganda image that, for once, corresponds to reality.
Source: http://images.linnlive.com/1e037c81da387d8e4d1c2557d0a46f2b/b7d5376d-d9e9-4aaf-ad40-45f69e100453.jpg.

British legitimacy was also challenged in India, where for the first time the National Congress and the Muslin League were united in demanding constitutional change, removing the traditional British argument of protecting the Muslim minority. Indian nationalism soon become a mass movement, reinforced by the fact that India was supporting the British War effort at a large human and economic cost. Globally the war reinforced nationalism and despite Britain and France's efforts to retain, and even expand, their empires, the tide had turned for good against Imperialism and Colonial rule was running on borrowed time.

Lebensrauming the world order

The other candidate to superpower status to emerge in the interwar period was the Nazi plan for an expanded German state (Figure 48). Starting from the same premise as the Soviets, that there would be another world war and that victory in that war would require superpower status. Nazism

adopted a plan for creating a European superpower that incorporated a considerable landmass. This was a different approach form the Communist one, the Germans still adopting a vision of power that rested in classical land extension and population size, factors that the soviets could take for granted and that Russian History had shown to be insufficient in itself to ensure victory.. This approach followed the classical German school of geopolitics that incorporated the ideas of Friedrich Ratzel and the later views of Karl Haushofer with the influence of Ludendorff's experiments with Ober Ost.

Figure 48 – A Nazi era German map showing expansion plans within the lebensraum concept.
Source: http://i1.wp.com/halat.pl/der_Aufbau_des_Grossdetschen_Reiches_seit_1933.jpg

This vision was basically flawed since it overstressed the importance of land as a short cut to wealth, when what really mattered, as the Soviets, who still felt under powered even with their vast spaces, realized, was wealth. Germany therefore concentrated its economy on creating a war machine (and tried to do it at an impossibly accelerated rhythm that kept it dangerously close to bankruptcy) that could be used to seize new territories, without solving the economic problems that made it uncompetitive. By 1943, despite its expansion, the Third Reich total production was only one fourth of the United States, and productivity per worker was roughly half. It was also a total inversion of the policy implemented by the Weimar Republic that had, correctly, regarded economic growth as the path for German resurgence.

Hitler correctly understood the critical importance of the United States and its capabilities, but totally failed to understand the importance of the economic factor as the basis of that power, thinking that it would be possible that Germany, as Adam Tooze has pointed out "(…) *by one last great land grab in the East it would create the self-sufficient basis for both domestic affluence and the platform necessary to prevail in the coming superpower competition with the United States*.[43]"

Hitler expected to be able to use anti-communism to create the conditions for an aggressive expansion in the East at the expense of the Soviet Union without having to fight a war in the West. This reasoning incorporated a total misunderstanding of the political realities of France and Great Britain only possible in a fanatical for whom is views are not only correct, but manifestly obvious and self-evident. Hitler therefore took absurd risks that rushed Germany into a World War much ahead of its rearmament plans (that would have been more or less completed by 1942 in the unlikely event of Germany managing to delay bankruptcy and the consequence internal collapse long enough to complete them). The war started just in time to avoid a general collapse of the economy, massive military spending keeping it close to bankruptcy that was only delayed by successive appropriation of private and state (Austrian, Czechoslovakian) resources.

It was a suicidal gamble, that should have led to a much faster defeat[44] had the armed forces of its enemies been better led and organized, and that inevitably reminds us of the Bismarck concept that preventive war is like committing suicide for fear of death.

The pope speaks out – Pio XI and the corporate state.

Global capitalism was the nemesis of the extremists on both sides, but was to be challenged on more conventional terms when Pope Pio XI laid out in his Quadragesimo Anno encyclical the framework for a new model of authoritarian right wing government that was to confer an aura of righteousness to the socially and economically conservative right wing dictator-

[43] Tooze, A. Wages of Destruction, pg xxiv.

[44] There wasn't a Plan B for the possibility of Pan Yellow failing. The Luftwaffe essentially fought the Battle of Britain with French aviation fuel reserves, and would have faced a fuel crises in the event of a stabilization of the front in France in failed Plan Yellow.

ships that were the norm, rather than the exception, on Europe before the Second World Ward (Figure 49).

Figure 49 – Pope Pio XI, whose influence is still felt in conservative catholic political circles.
Source: https://en.wikipedia.org/wiki/Pope_Pius_XI#/media/File:Papst_Pius_XI._1JS.jpg

Issued in 1931 on the fortieth anniversary of Pope Leo XIII Rerum Novarum encyclical on social doctrine, it denounced capitalism as immoral and communism as evil, and announced as an alternative an idealized "corporate state", where workers would be paid enough to have a decent simple life, and where women wouldn't work (the document presents women's work as an unnatural consequence of low wages). A vertical social organization in which people associate according to their field of work and not according to their social class, would regulate each sector of activity, binding workers and bosses in a single mutually beneficial organization. Profits would not be used to accumulate wealth, but to generate more decently paid jobs, from which the sons of the workers, expected to be many, would, once properly reared by their stay at home mums, benefit. These corporations were expected to keep the economy highly regulated not by state intervention nor by the invisible hand of the market but rather by the hand of God, the proposed state being in fact a Theocracy. Never realistic and very dated now, Pio XI ideas still resonate in some conservative sectors with close ties with the Catholic Church, and the idea of vertical integration of workers organizations found some echo in present day German labor unions relations with big companies

In the late 1930s, right wing authoritarian States rather than liberal democracies were the default political mode in Europe, a situation that made it easier for Germany to build a coalition against the Soviet Union under the "Crusade against Bolshevism" theme. Barbarossa simply wouldn't have been possible without the allied forces that held large sectors of the front and provided a large part of the forces involved.

This idealized vision of a catholic conservative state is especially relevant to demonstrate how the aftermath of American capitalism unipolar moment inspired alternative proposals from all kinds. To paraphrase Lord Acton, power tends to generate resistance, global power tends to generate global resistance.

PART III
THE STORM WATCHERS GUIDE TO THE GREAT WAR

This being a study of history, at this point a cliché inevitably comes to mind, in this instance, the maxim by Santayana stating that those who do not understand history are doomed to repeat it (Figure 50).

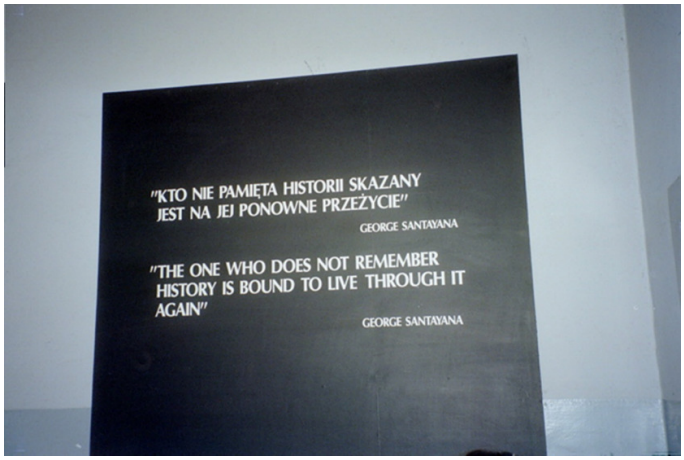

Figure 50 – This display of Santayana's much quoted aphorism gains extra significance by being located in Auschwitz.
Source: https://upload.wikimedia.org/wikipedia/commons/4/4b/ Santaya-na_on_history.jpg

Looking at the evolution of the international political system before and after the Great War for the purposes of this study (without any ambition of challenging the more traditional international relations classifications) identify several phases that must be considered to frame our interpretation of events.

– From 1815 to 1871 the system can be regarded as balanced and multipolar, world politics being dominated by a small number of "great Powers" that regarded each other more or less as equals.

– From 1871 to 1914 the system is still multipolar but becomes progressive unbalanced, with two of its actors, The German Empire and the United Sates, becoming progressively more powerful than its rivals.

– From 1918 to 1929 the system went through what was essentially a unipolar moment, with the United States being far more powerful than any other actor.

– From 1929 to 1945 the system returned to a multipolar mode, with the United States experiencing the debilitating effects of the world economic crisis while the Soviet Union on the long term, and Nazi Germany for a short period attempted to challenge the United States.

– From 1945 the world went to an unbalanced bipolar system, the United Sates being intrinsically more powerful than the USSR, that was only able to stay in the bipolar game through an increasingly suicidal economic policy of all guns, no butter.

– From 1991 with the collapse of the Soviet Union the world experienced another unipolar moment, once again brief, and appears to be returning to an unbalanced multipolar system, the main challengers to North American hegemony being China and arguably the European Union whose potential is untested in all but the economic area and whether or not it is a challenger depends on how much one chooses to believe in it

Within that perspective, the Great War provides interesting lessons both on the dangers of unbalanced multipolar systems (that led to the war) and on the emergence of challengers in a unipolar system (Particularly on the lengths that states and ideologies that are "pushing back" against a unipolar moment will go to). One factor that is of particular interest is how the post war failure of the attempt to build an international world order based on 14th of the 14 points shows the limits internal contradictions impose on international actors. Wilson had condemned action of the type he had been enacting in Latin America and the United States assumed the role of champions for freedom while maintaining a deeply segregated society. The rights of German populations outside the Weimar Republic were supressed by the Treaty of Versailles and Britain and France were to condemn Italy for doing exactly what they had done a generation earlier.

This internal contradictions might explain why the United States seemed to do so little with its dominant position. The most obvious demonstration of the strength of the United States diplomatic position after the war was the Washington Naval Treaty. The United States had been strengthening its navy at an accelerated pace and would, in time, surpass the Royal Navy and become the dominant naval power of the world. A new naval race seemed about to begin after the war, technological progress allowing a new generation of larger more powerful ships that would make existing fleets

rapidly obsolete. Building them would be very expensive, however, and the United States opted for the rather more practical way of deciding how much ships each navy should have.

When U.S Secretary of State Hughes opened the conference, instead of a cautious diplomatic approach, he simply presented a list of all the Ships that each of the major navies would be required to scrap, and each it would be allowed to keep, setting naval battleship strength on a fixed ratio of 5/5/3/1.75/1.75 for Britain, the United States, Japan, Italy, and France. The treaty also froze battleship construction.

The Treaty is notable by:

– Being one of the most effective armament limitations treaties ever (and is included in Annex C essentially for that motive). (Critics of its effectiveness might point out that some navies cheated on tonnage, Italian and Japanese cruisers for example being 10 to 20% over the 10.000t limits) but that's very minor when compared to the fact that all signatories scrapped the ships they had agreed to, built only what was allowed in the treaty and in the case of the French and Italian navies only after the allowed date and that the provisions intended to prevent the building of battleships by other nations worked extremely well.

– Britain accepting for the first time since the XVII Century that it would no longer be superior to any other navy in the world (Britain had for a long time kept the two power standard that required the Royal navy to match the power of the two next strongest navies combined).

– How little the final result differed from the opening U. S. Proposal. This happened because the United States alone had the money to win a new naval race, and because of how well prepared a logical the proposal had been. The Treaty is an excellent example of how a dominant position should be exploited, and sadly one that wasn't followed enough.

The modern equivalent to the WNT is arguably the CFE treaty signed in 1990, and negotiated as the USA economic superiority over the USSR made continued arms competition impossible for the Soviets. This, as the WNT, was a case of a stop being imposed to an arms race under economic pressure. As Britain had done in the early 20, the USSR renounced the quest for numeric superiority and the inherent offensive options superiority provides, renouncing a race it lacked the money to win. The provisions of the Treaty, with lists of weapons to be decommissioned, strict limits on the numbers of weapon systems and specific rules on weapon characterization are very similar to the logic of the WNT. There were even some instances of

specific treaty weapons, some manufacturers introducing 100mm mortars designed to fit just below the treaty limits. Like the 600t torpedo boats of the 30s, they soon proved to be uninteresting compromises. The Treaty was however to be a minor achievement in a decade of lost possibilities.

Looking at the current conflicts in the light of Great War analysis, the ambitious unreasonableness of the Schlieffen Plan finds an echo in the decision to invade Iraq in 2003, based on wrong assumptions that underestimated the resistance of the environment in which the plan was to be implemented. And Haig's dilemma, when compelled to seek swift military success, has a parallel in the 'surge' in Iraq in 2007, revealing a typical need for democracies to seek decisive battles with politically acceptable targets, in a conceptual refusal of attrition mechanisms. This provides important lessons for political military relations, namely the length senior military leaders will go to in order to save, or get, their jobs.

This is not a specific world war one phenomenon, even sacred national myths as Lord Nelson having intrigued their way into Higher Command. What is more serious is that in the Great War, top commanders changed their plans, sometimes at the expense of their troops and against military good sense, to stay at their desks. Nelson never adopted an inferior plan to get a promotion, but Haig, having plotted against his predecessor (with some justification, Lord French being generally regarded as a poor commander for the BEF) compromised his plans in order to make them more "saleable" in parliament. Falkenhayn followed the same course as he fought for his job while his troops fought for Verdun.

The French option in 1918, when Clemenceau wrote Foch a blank political support check, that Foch invested in full in Petain, the most skilled battlefield commander of (he French Army is easy to point out as model, but the Kaiser though he was doing just that with Moltke in 1914 with disastrous consequences. Choosing the best Commander is the most critical, and difficult choice, and one that each government must weight carefully. Once chosen, interfering with is work is almost always wrong. An unpressured average General is often better than a good one under political pressure. That is not to say that governments should abdicate from control over their military, rather than that their control lever should actually be a switch with just two modes: "Full support" being one position and "You're fired" the other. Anything in between just degrades performance and encourages General Staff power games.

Furthermore, our obsession with anything which could be described by words including 'smart' or 'net' shows that we still build entire military models on the basis of culturally dominant ideas, much the same way as the creators of Plan XVII.

One importance lesson of the Great War is the vulnerability of military culture to the "Zeitgeist" of the times. In 1914 it was the overpowering cult of the offensive and the propensity to think "big". Now it's the overwhelming obsession with technology. Theoretically the much broader education "ruling class" people had at the turn of the century, when Thomas Huxley maxim that one should *"learn something about everything and everything about something"* was followed, should have made them more vulnerable than today's generation of specialists. A 1910 engineer would have learned Latin, history and geography as part of his (rarely her in those days) high school education and would be expected to follow major developments in the arts and sciences as a member of the "learned" people. Our much narrower education often produces specialists that, in Stanislaw Lem definition, are *"analphabets whose ignorance is not perfect."* But since narrow specialization tends to produce sterile results, modern organizations found a replacement for a decent education in the form of the "Holistic" approach that resorts to bringing together specialists in several fields to cover each other's cultural blind spots.

This groups are even more vulnerable, due to the need for consensus, to the siren calls of the intellectual fashion of the day. Zeitgeist Krieg is therefore not a specific 1914 phenomenon, but a very common military intellectual pattern.

The full implications of viewing military history through the Zeitgeist Krieg perspective are far too vast to be developed in this book, but a quick look at the last century would seem to indicate a pattern of cultural/military synchronism, some generational shifts being easy to spot, namely:

– The canal building, mountain climbing, Schelieffen planning generation;

– The idealistic lost generation of Douhet, Fuller and the Military Leninists;

– The Jet Age generation with their emphasis on rocket science technology followed by a counter cultural propensity for irregular (special) operations;

– The end of History state building peace keeping (brief) generation;

– The artificial (military) intelligence drone using generation currently dominant, with their inevitable new age references to holist approaches across multiple domains.

The dangers of exploiting the national aspirations of peoples for military purposes were also amply demonstrated during the War. The Anglo-French exploitation of the Arab national aspirations brought limited military advantages, but being very poorly coordinated vertically, with the military officers doing the field work often having a completely different agenda (and occasionally a doubtful loyalty) to the political authorities of their countries brought serious problems in the long term. The Saudi situation, with under planned and politically incongruent military options handing control of a strategic important region to a fanatical religious sect, is an extreme case of the dangers of such exploitations. With the British supporting both the more moderate Hashemites and the radical Islamic fanatics of Ibn Saud, despite Lawrence repeated objections to the later and despite their obviously conflicting claims, Saud's movement grew during the war , and went on to seize what we now know as Saudi Arabia after the war, creating the first modern radical Islamic state. If we compare Saud's limited wartime contribution to Allied victory to the implications his form of government was to have for the whole region a century later, the gravity of the error made in 1916 becomes obvious. It was however a mistake that was to be amply repeated, with the same predictable consequences, in many occasions, notably in Afghanistan against the soviets, and more recently in Middle East conflicts, with the western powers supporting "the enemies of my enemies" even when their aims and ideological principles were in total contradictions with the desired regional end state. The fact that managing the fall of an empire is an extremely complex and dangerous process that should never be rushed was forgotten, and parallels can be traced between Turkey's struggle to define its post imperial status under Kemal and Russia's struggle to define its post-soviet status under Putin. Since 1918 we should have learned that the fanatics we turn loose on our enemies will eventually turn against us.

Important lessons can also be drawn from the German experiments, their option to support regional independences as a quick way to end the war on the Eastern Front creating a chaotic situation that prevented the very use of the resources they were trying to secure. A rare successful case appears to have been the cooperation with Finland, in which the ideological proximity between the Finish nationalist and their German allies both pre-

sented the gravest danger for the Bolsheviks in the civil war and creating the conditions for an alliance between Germany and Finland thirty years later.

The lessons to be drawn from the necessity of fighting a long attritional war are also relevant when democracies are engaged in seemingly open ended conflicts. The perception problems that arise from of using military forces (and leaders) that came from years of preparing for short, intense wars in long attritional campaigns as part of what we used to call "The War on Terror" and is now commonly called "The Long War" are very similar to the ones European Armed Forces faced a hundred years ago.

They can be felt at the need to adapt mentalities at the top or at the difficulty of issuing orders to small units that are conductive to the achievement of a favourable (and favourable in modern terms requires a lot more enemy kill per own losses than a hundred years ago) kill ratio but that can be understood by the units as a mission. They can also be felt in questions such as maintaining the morale of troops stuck in dangerous, uncomfortable places, the firebases in Afghanistan reintroducing issues that would be recognisable instantly by the Company Commanders stuck in trenches in quitter sectors of the Western or Italian front. But they can also be felt on studies for dedicated littoral surface combatants that remind us of the monitors of the Great War (Figure 51).

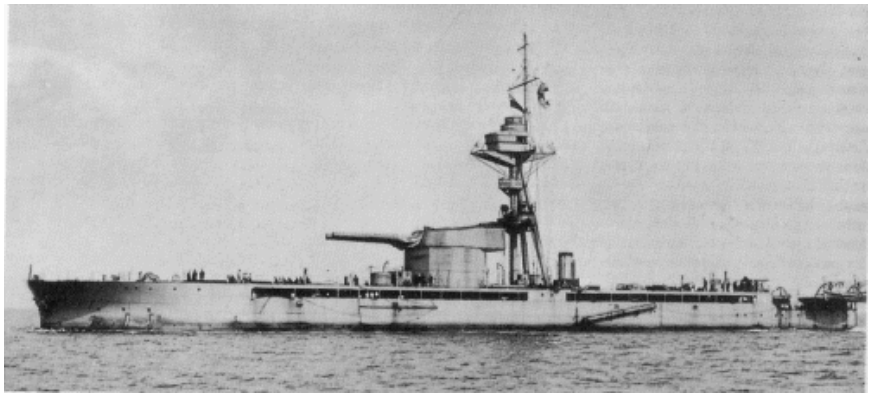

Figure 51 – The Marshall Ney Monitor in 1916. When Navies start talking about warships optimized for providing fire support for littoral operations in any context other than supporting amphibious assault operations it is a clear sign we are dealing with an attritional war.

Source: http://navypedia.org/ships/uk/brit_bb1_marshal_ney.htm

One century after the war, being able to use our extensive analysis of that conflict to feed our understanding of long wars of attrition in all their

dimensions can be a powerful tool to improve our capabilities. One thing storm watchers know for sure is that there will always be another storm. It might be too late to avoid Santayana's curse but, as the great American poet Charles Bukowsky taught us, "*what matters most is how well you walk through the fire*." It's our fire to walk through as well as we can.

Pedrouços, November 2017

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ANNEX A: PRESIDENT WOODROW WILSON'S FOURTEEN POINTS 8 JANUARY, 1918:

It will be our wish and purpose that the processes of peace, when they are begun, shall be absolutely open and that they shall involve and permit henceforth no secret understandings of any kind. The day of conquest and aggrandizement is gone by; so is also the day of secret covenants entered into in the interest of particular governments and likely at some unlooked-for moment to upset the peace of the world. It is this happy fact, now clear to the view of every public man whose thoughts do not still linger in an age that is dead and gone, which makes it possible for every nation whose purposes are consistent with justice and the peace of the world to avow nor or at any other time the objects it has in view.

We entered this war because violations of right had occurred which touched us to the quick and made the life of our own people impossible unless they were corrected and the world secure once for all against their recurrence. What we demand in this war, therefore, is nothing peculiar to ourselves. It is that the world be made fit and safe to live in; and particularly that it be made safe for every peace-loving nation which, like our own, wishes to live its own life, determine its own institutions, be assured of justice and fair dealing by the other peoples of the world as against force and selfish aggression. All the peoples of the world are in effect partners in this interest, and for our own part we see very clearly that unless justice be done to others it will not be done to us. The programme of the world's peace, therefore, is our programme; and that programme, the only possible programme, as we see it, is this:

I. Open covenants of peace, openly arrived at, after which there shall be no private international understandings of any kind but diplomacy shall proceed always frankly and in the public view.

II. Absolute freedom of navigation upon the seas, outside territorial waters, alike in peace and in war, except as the seas may be closed in whole or in part by international action for the enforcement of international covenants.

III. The removal, so far as possible, of all economic barriers and the establishment of an equality of trade conditions among all the nations consenting to the peace and associating themselves for its maintenance.

IV. Adequate guarantees given and taken that national armaments will be reduced to the lowest point consistent with domestic safety.

V. A free, open-minded, and absolutely impartial adjustment of all colonial claims, based upon a strict observance of the principle that in determining all such questions of sovereignty the interests of the populations concerned must have equal weight with the equitable claims of the government whose title is to be determined.

VI. The evacuation of all Russian territory and such a settlement of all questions affecting Russia as will secure the best and freest cooperation of the other nations of the world in obtaining for her an unhampered and unembarrassed opportunity for the independent determination of her own political development and national policy and assure her of a sincere welcome into the society of free nations under institutions of her own choosing; and, more than a welcome, assistance also of every kind that she may need and may herself desire. The treatment accorded Russia by her sister nations in the months to come will be the acid test of their good will, of their comprehension of her needs as distinguished from their own interests, and of their intelligent and unselfish sympathy.

VII. Belgium, the whole world will agree, must be evacuated and restored, without any attempt to limit the sovereignty which she enjoys in common with all other free nations. No other single act will serve as this will serve to restore confidence among the nations in the laws which they have themselves set and determined for the government of their relations with one another. Without this healing act the whole structure and validity of international law is forever impaired.

VIII. All French territory should be freed and the invaded portions restored, and the wrong done to France by Prussia in 1871 in the matter of Alsace-Lorraine, which has unsettled the peace of the world for nearly fifty years, should be righted, in order that peace may once more be made secure in the interest of all.

IX. A readjustment of the frontiers of Italy should be effected along clearly recognizable lines of nationality.

X. The peoples of Austria-Hungary, whose place among the nations we wish to see safeguarded and assured, should be accorded the freest opportunity to autonomous development.

XI. Rumania, Serbia, and Montenegro should be evacuated; occupied territories restored; Serbia accorded free and secure access to the sea; and the relations of the several Balkan states to one another determined by friendly counsel along historically established lines of allegiance and nationality; and

international guarantees of the political and economic independence and territorial integrity of the several Balkan states should be entered into.

XII. The turkish portion of the present Ottoman Empire should be assured a secure sovereignty, but the other nationalities which are now under Turkish rule should be assured an undoubted security of life and an absolutely unmolested opportunity of autonomous development, and the Dardanelles should be permanently opened as a free passage to the ships and commerce of all nations under international guarantees.

XIII. An independent Polish state should be erected which should include the territories inhabited by indisputably Polish populations, which should be assured a free and secure access to the sea, and whose political and economic independence and territorial integrity should be guaranteed by international covenant.

XIV. A general association of nations must be formed under specific covenants for the purpose of affording mutual guarantees of political independence and territorial integrity to great and small states alike.

In regard to these essential rectifications of wrong and assertions of right we feel ourselves to be intimate partners of all the governments and peoples associated together against the Imperialists. We cannot be separated in interest or divided in purpose. We stand together until the end.

For such arrangements and covenants we are willing to fight and to continue to fight until they are achieved; but only because we wish the right to prevail and desire a just and stable peace such as can be secured only by removing the chief provocations to war, which this programme does remove. We have no jealousy of German greatness, and there is nothing in this programme that impairs it. We grudge her no achievement or distinction of learning or of pacific enterprise such as have made her record very bright and very enviable. We do not wish to injure her or to block in any way her legitimate influence or power. We do not wish to fight her either with arms or with hostile arrangements of trade if she is willing to associate herself with us and the other peace- loving nations of the world in covenants of justice and law and fair dealing. We wish her only to accept a place of equality among the peoples of the world, - the new world in which we now live, - instead of a place of mastery.

ANNEX B: THE PEACE TREATY OF BREST-LITOVSK. 3 MARCH, 1918 (WITHOUT APPENDICES)

Article I. Germany, Austria-Hungary, Bulgaria, and Turkey, for the one part, and Russia, for the other part, declare that the state of war between them has ceased. They are resolved to live henceforth in peace and amity with one another.

Article II. The contracting parties will refrain from any agitation or propaganda against the Government or the public and military institutions of the other party. In so far as this obligation devolves upon Russia, it holds good also for the territories occupied by the Powers of the Quadruple Alliance.

Article III. The territories lying to the west of the line agreed upon by the contracting parties which formerly belonged to Russia, will no longer be subject to Russian sovereignty; the line agreed upon is traced on the map submitted as an essential part of this treaty of peace. The exact fixation of the line will be established by a Russo-German commission.

No obligations whatever toward Russia shall devolve upon the territories referred to, arising from the fact that they formerly belonged to Russia.

Russia refrains from all interference in the internal relations of these territories. Germany and Austria-Hungary purpose to determine the future status of these territories in agreement with their population.

Article IV. As soon as a general peace is concluded and Russian demobilization is carried out completely Germany will evacuate the territory lying to the east of the line designated in paragraph 1 of Article III, in so far as Article IV does not determine otherwise.

Russia will do all within her power to insure the immediate evacuation of the provinces of eastern Anatolia and their lawful return to Turkey.

The districts of Erdehan, Kars, and Batum will likewise and without delay be cleared of the russian troops. Russia will not interfere in the reorganization of the national and international relations of these districts, but leave it to the population of these districts, to carry out this reorganization in agreement with the neighboring States, especially with Turkey.

Article V. Russia will, without delay, carry out the full demobilization of her army inclusive of those units recently organized by the present Government. Furthermore, Russia will either bring her warships into russian ports and there detain them until the day of the conclusion of a general

peace, or disarm them forthwith. Warships of the States which continue in the state of war with the Powers of the Quadruple Alliance, in so far as they are within Russian sovereignty, will be treated as Russian warships.

The barred zone in the Arctic Ocean continues as such until the conclusion of a general peace. In the Baltic sea, and, as far as Russian power extends within the Black sea, removal of the mines will be proceeded with at once. Merchant navigation within these maritime regions is free and will be resumed at once. Mixed commissions will be organized to formulate the more detailed regulations, especially to inform merchant ships with regard to restricted lanes. The navigation lanes are always to be kept free from floating mines.

Article VI. Russia obligates herself to conclude peace at once with the Ukrainian People's Republic and to recognize the treaty of peace between that State and the Powers of the Quadruple Alliance. The Ukrainian territory will, without delay, be cleared of Russian troops and the Russian Red Guard. Russia is to put an end to all agitation or propaganda against the Government or the public institutions of the Ukrainian People's Republic.

Esthonia and Livonia will likewise, without delay, be cleared of Russian troops and the Russian Red Guard. The eastern boundary of Esthonia runs, in general along the river Narwa. The eastern boundary of Livonia crosses, in general, lakes Peipus and Pskow, to the southwestern corner of the latter, then across Lake Luban in the direction of Livenhof on the Dvina. Esthonia and Livonia will be occupied by a German police force until security is insured by proper national institutions and until public order has been established. Russia will liberate at once all arrested or deported inhabitants of Esthonia and Livonia, and insures the safe return of all deported Esthonians and Livonians.

Finland and the Aaland Islands will immediately be cleared of Russian troops and the Russian Red Guard, and the Finnish ports of the Russian fleet and of the Russian naval forces. So long as the ice prevents the transfer of warships into Russian ports, only limited forces will remain on board the warships. Russia is to put an end to all agitation or propaganda against the Government or the public institutions of Finland.

The fortresses built on the Aaland Islands are to be removed as soon as possible. As regards the permanent non- fortification of these islands as well as their further treatment in respect to military technical navigation matters, a special agreement is to be concluded between Germany, Finland, Russia, and Sweden; there exists an understanding to the effect that, upon

Germany's desire, still other countries bordering upon the Baltic Sea would be consulted in this matter.

Article VII. In view of the fact that Persia and Afghanistan are free and independent States, the contracting parties obligate themselves to respect the political and economic independence and the territorial integrity of these states.

Article VIII. The prisoners of war of both parties will be released to return to their homeland. The settlement of the questions connected therewith will be effected through the special treaties provided for in Article XII.

Article IX. The contracting parties mutually renounce compensation for their war expenses, i.e., of the public expenditures for the conduct of the war, as well as compensation for war losses, i.e., such losses as were caused [by] them and their nationals within the war zones by military measures, inclusive of all requisitions effected in enemy country.

Article X. Diplomatic and consular relations between the contracting parties will be resumed immediately upon the ratification of the treaty of peace. As regards the reciprocal admission of consuls, separate agreements are reserved.

Article XI. As regards the economic relations between the Powers of the Quadruple Alliance and Russia the regulations contained in Appendices II-V are determinative....

Article XII. The reestablishment of public and private legal relations, the exchange of war prisoners and interned citizens, the question of amnesty as well as the question anent the treatment of merchant ships which have come into the power of the opponent, will be regulated in separate treaties with Russia which form an essential part of the general treaty of peace, and, as far as possible, go into force simultaneously with the latter.

Article XIII. In the interpretation of this treaty, the German and Russian texts are authoritative for the relations between Germany and Russia; the German, the Hungarian, and Russian texts for the relations between Austria-Hungry and Russia; the Bulgarian and Russian texts for the relations between Bulgaria and Russia; and the Turkish and Russian texts for the relations between Turkey and Russia.

Article XIV. The present treaty of peace will be ratified. The documents of ratification shall, as soon as possible, be exchanged in Berlin. The Russian Government obligates itself, upon the desire of one of the powers of the Quadruple Alliance, to execute the exchange of the documents of ratification within a period of two weeks. Unless otherwise provided for in its arti-

cles, in its annexes, or in the additional treaties, the treaty of peace enters into force at the moment of its ratification.

In testimony whereof the Plenipotentiaries have signed this treaty with their own hand.

Executed in quintuplicate at Brest-Litovsk, 3 March, 1918.

ANNEX C: THE WASHINGTON NAVAL TRATY

CHAPTER I. - GENERAL PROVISIONS RELATING TO THE LIMITATION OF NAVAL ARMAMENT

Article I

The Contracting Powers agree to limit their respective naval armament as provided in the present Treaty.

Article II

The Contracting Powers may retain respectively the capital ships which are specified in Chapter II, Part 1. On the coming into force of the present Treaty, but subject to the following provisions of this Article, all other capital ships, built or building, of the United States, the British Empire and Japan shall be disposed of as prescribed in Chapter II, Part 2.

In addition to the capital ships specified in Chapter II, Part 1, the United States may complete and retain two ships of the West Virginia class now under construction. On the completion of these two ships, the North Dakota and Delaware, shall be disposed of as prescribed in Chapter II, Part 2.

The British Empire may, in accordance with the replacement table in Chapter II, Part 3, construct two new capital ships not exceeding 35,000 tons (35,560 metric tons) standard displacement each. On the completion of the said two ships the Thunderer, King George V, Ajax and Centurion shall be disposed of as prescribed in Chapter II, Part 2.

Article III

Subject to the provisions of Article II, the Contracting Powers shall abandon their respective capital ship building programs, and no new capital ships shall be constructed or acquired by any of the Contracting Powers except replacement tonnage which may be constructed or acquired as specified in Chapter II, Part 3.

Ships which are replaced in accordance with Chapter II, Part 3, shall be disposed of as prescribed in Part 2 of that Chapter.

Article IV

The total capital ship replacement tonnage of each of the Contracting Powers shall not exceed in standard displacement, for the United States 525,000 tons (533,400 metric tons); for the British Empire 525,000 tons (533,400

metric tons); for France 175,000 tons (177,800 metric tons); for Italy 175,000 tons (177,800 metric tons); for Japan 315,000 tons (320,040 metric tons).

Article V

No capital ship exceeding 35,000 tons (35,560 metric tons) standard displacement shall be acquired by, or constructed by, for, or within the jurisdiction of, any of the Contracting Powers.

Article VI

No capital ship of any of the Contracting Powers shall carry a gun with a calibre in excess of 16 inches (406 millimetres).

Article VII

The total tonnage for aircraft carriers of each of the Contracting Powers shall not exceed in standard displacement, for the United States 135,000 tons (137,160 metric tons); for the British Empire 135,000 tons (137,160 metric tons); for France 60,000 tons (60,960 metric tons); for Italy 60,000 tons (60,960 metric tons); for Japan 81,000 tons (82,296 metric tons).

Article VIII

The replacement of aircraft carriers shall be effected only as prescribed in Chapter II, Part 3, provided, however, that all aircraft carrier tonnage in existence or building on November 12, 1921, shall be considered experimental, and may be replaced, within the total tonnage limit prescribed in Article VII, without regard to its age.

Article IX

No aircraft carrier exceeding 27,000 tons (27,432 metric tons) standard displacement shall be acquired by, or constructed by, for or within the jurisdiction of, any of the Contracting Powers.

However, any of the Contracting Powers may, provided that its total tonnage allowance of aircraft carriers is not thereby exceeded, build not more than two aircraft carriers, each of a tonnage of not more than 33,000 tons (33,528 metric tons) standard displacement, and in order to effect economy any of the Contracting Powers may use for this purpose any two of their ships, whether constructed or in course of construction, which would otherwise be scrapped under the provisions of Article II. The armament of any aircraft carriers exceeding 27,000 tons (27,432 metric tons) standard displacement shall be in accordance with the requirements of Article X, except that the total number of guns to be carried in case any of such guns be of a

calibre exceeding 6 inches (152 millimetres), except anti-aircraft guns and guns not exceeding 5 inches (127 millimetres), shall not exceed eight.

Article X

No aircraft carrier of any of the Contracting Powers shall carry a gun with a calibre in excess of 8 inches (203 millimetres). Without prejudice to the provisions of Article IX, if the armament carried includes guns exceeding 6 inches (152 millimetres) in calibre the total number of guns carried, except anti-aircraft guns and guns not exceeding 5 inches (127 millimetres), shall not exceed ten. If alternatively the armament contains no guns exceeding 6 inches (152 millimetres) in calibre, the number of guns is not limited. In either case the number of anti-aircraft guns and of guns not exceeding 5 inches (127 millimetres) is not limited.

Article XI

No vessel of war exceeding 10,000 tons (10,160 metric tons) standard displacement, other than a capital ship or aircraft carrier, shall be acquired by, or constructed by, for, or within the jurisdiction of, any of the Contracting Powers. Vessels not specifically built as fighting ships nor taken in time of peace under government control for fighting purposes, which are employed on fleet duties or as troop transports or in some other way for the purpose of assisting in the prosecution of hostilities otherwise than as fighting ships, shall not be within the limitations of this Article.

Article XII

No vessel of war of any of the Contracting Powers, hereafter laid down, other than a capital ship, shall carry a gun with a calibre in excess of 8 inches (203 millimetres).

Article XIII

Except as provided in Article IX, no ship designated in the present Treaty to be scrapped may be reconverted into a vessel of war.

Article XIV

No preparations shall be made in merchant ships in time of peace for the installation of warlike armaments for the purpose of converting such ships into vessels of war, other than the necessary stiffening of decks for the mounting of guns not exceeding 6 inch (152 millimetres) calibre.

Article XV

No vessel of war constructed within the jurisdiction of any of the Contracting Powers for a non-Contracting Power shall exceed the limitations as

to displacement and armament prescribed by the present Treaty for vessels of a similar type which may be constructed by or for any of the Contracting Powers; provided, however, that the displacement for aircraft carriers constructed for a non-Contracting Power shall in no case exceed 27,000 tons (27,432 metric tons) standard displacement.

Article XVI

If the construction of any vessel of war for a non-Contracting Power is undertaken within the jurisdiction of any of the Contracting Powers, such Power shall promptly inform the other Contracting Powers of the date of the signing of the contract and the date on which the keel of the ship is laid; and shall also communicate to them the particulars relating to the ship prescribed in Chapter II, Part 3, Section I (b), (4) and (5).

Article XVII

In the event of a Contracting Power being engaged in war, such Power shall not use as a vessel of war any vessel of war which may be under construction within its jurisdiction for any other Power, or which may have been constructed within its jurisdiction for another Power and not delivered.

Article XVIII

Each of the Contracting Powers undertakes not to dispose by gift, sale or any mode of transfer of any vessel of war in such a manner that such vessel may become a vessel of war in the Navy of any foreign Power.

Article XIX

The United States, the British Empire and Japan agree that the status quo at the time of the signing of the present Treaty, with regard to fortifications and naval bases, shall be maintained in their respective territories and possessions specified hereunder:

(1) The insular possessions which the United States now holds or may hereafter acquire in the Pacific Ocean, except (a) those adjacent to the coast of the United States, Alaska and the Panama Canal Zone, not including the Aleutian Islands, and (b) the Hawaiian Islands;

(2) Hong Kong and the insular possessions which the British Empire now holds or may hereafter acquire in the Pacific Ocean, east of the meridian of 110° east longitude, except (a) those adjacent to the coast of Canada, (b) the Commonwealth of Australia and its Territories, and (c) New Zealand;

(3) The following insular territories and possessions of Japan in the Pacific Ocean, to wit: the Kurile Islands, the Bonin Islands, Amami-

Oshima, the Loochoo Islands, Formosa and the Pescadores, and any insular territories or possessions in the Pacific Ocean which Japan may hereafter acquire.

The maintenance of the status quo under the foregoing provisions implies that no new fortifications or naval bases shall be established in the territories and possessions specified; that no measures shall be taken to increase the existing naval facilities for the repair and maintenance of naval forces, and that no increase shall be made in the coast defences of the territories and possessions above specified. This restriction, however, does not preclude such repair and replacement of worn-out weapons and equipment as is customary in naval and military establishments in time of peace.

Article XX

The rules for determining tonnage displacement prescribed in Chapter II, Part 4, shall apply to the ships of each of the Contracting Powers.

CHAPTER II. - RULES RELATING TO THE EXECUTION OF THE TREATY-DEFINITION OF TERMS

PART 1. - CapitaL Ships Which may Be Retained by the Contracting Powers

In accordance with Article II ships may be retained by each of the Contracting Powers as specified in this Part.

SHIPS WHICH MAY BE RETAINED BY THE UNITED STATES

Name:	Tonnage
Maryland	32,600
California	32,300
Tennessee	32,300
Idaho	32,000
New Mexico	32,000
Mississippi	32,000
Arizona	31,400
Pennsylvania	31,400
Oklahoma	27,500
Nevada	27,500
New York	27,000
Texas	27,000
Arkansas	26,000

Name:	Tonnage
Wyoming	26,000
Florida	21,825
Utah	21,825
North Dakota	20,000
Delaware	20,000
Total Tonnage	500,650

On the completion of the two ships of the West Virginia class and the scrapping of the North Dakota and Delaware, as provided in Article II, the total tonnage to be retained by the United States will be 525,850 tons.

SHIPS WHICH MAY BE RETAINED BY THE BRITISH EMPIRE

Name:	Tonnage
Royal Sovereign	25,750
Royal Oak	25,750
Revenge	25,750
Resolution	25,750
Ramilies	25,750
Malaya	27,500
Valiant	27,500
Barham	27,500
Queen Elizabeth	27,500
Warsprite	27,500
Benbow	25,000
Emperor of India	25,000
Iron Duke	25,000
Marlborough	25,000
Hood	41,200
Renown	26,500
Repulse	26,500
Tiger	28,500
Thunderer	22,500
King George V	23,000
Ajax	23,000
Centurion	23,000
Total Tonnage	580,450

On the completion of the two new ships to be constructed and the scrapping of the Thunderer, King George V, Ajax and Centurion, as provided in Article II, the total tonnage to be retained by the British Empire will be 558,950 tons.

SHIPS WHICH MAY BE RETAINED BY FRANCE

Name:	Tonnage (metric tons)
Bretagne	23,500
Lorraine	23,500
Provence	23,500
Paris	23,500
France	23,500
Jean Bart	23,500
Courbet	23,500
Condorect	18,900
Diderot	18,900
Voltaire	18,900
Total Tonnage	221,170

France may lay down new tonnage in the years 1927, 1929, and 1931, as provided in Part 3, Section II.

SHIPS WHICH MAY BE RETAINED BY ITALY

Name:	Tonnage (metric tons)
Andrea Doria	22,700
Caio Duilio	22,700
Conte Di Cavour	22,500
Giulio Cesare	22,500
Leonardo Da Vinci	22,500
Dante Alighieri	19,500
Roma	12,600
Napoli	12,600
Vittorio Emanuele	12,600
Regina Elena	12,600
Total Tonnage	182,800

Italy may lay down new tonnage in the years 1927, 1929, and 1931, as provided in Part 3, Section II.

SHIPS WHICH MAY BE RETAINED BY JAPAN

Name:	Tonnage (metric tons)
Mutsu	33,800
Nagato	33,800
Hiuga	31,260

Name:	Tonnage (metric tons)
Ise	31,260
Yamashiro	30,600
Fu-So	30,600
Kirishima	27,500
Haruna	27,500
Hiyei	27,500
Kongo	27,500
Total Tonnage	301,320

PART 2. - Rules for Scrapping Vessels of War

The following rules shall be observed for the scrapping of vessels of war which are to be disposed of in accordance with Articles II and III.

I. A vessel to be scrapped must be placed in such condition that it cannot be put to combatant use.

II. This result must be finally effected in any one of the following ways:

(a) Permanent sinking of the vessel;

(b) Breaking the vessel up. This shall always involve the destruction or removal of all machinery, boilers and armour, and all deck, side and bottom plating;

(c) Converting the vessel to target use exclusively. In such case all the provisions of paragraph III of this Part, except sub-paragraph (6), in so far as may be necessary to enable the ship to be used as a mobile target, and except sub-paragraph (7), must be previously complied with. Not more than one capital ship may be retained for this purpose at one time by any of the Contracting Powers.

(d) Of the capital ships which would otherwise be scrapped under the present Treaty in or after the year 1931, France and Italy may each retain two sea-going vessels for training purposes exclusively, that is, as gunnery or torpedo schools. The two vessels retained by France shall be of the Jean Bart class, and of those retained by Italy one shall be the Dante Alighieri, the other of the Giulio Cesare class. On retaining these ships for the purpose above stated, France and Italy respectively undertake to remove and destroy their conning-towers, and not to use the said ships as vessels of war.

III.

(a) Subject to the special exceptions contained in Article IX, when a vessel is due for scrapping, the first stage of scrapping, which consists in rendering a ship incapable of further warlike service, shall be immediately undertaken.

(b) A vessel shall be considered incapable of further warlike service when there shall have been removed and landed, or else destroyed in the ship:

(1) All guns and essential portions of guns, fire-control tops and revolving parts of all barbettes and turrets;

(2) All machinery for working hydraulic or electric mountings;

(3) All fire-control instruments and range-finders;

(4) All ammunition, explosives and mines;

(5) All torpedoes, warheads and torpedo tubes;

(6) All wireless telegraphy installations;

(7) The conning tower and all side armour, or alternatively all main propelling machinery; and

(8) All landing and flying-off platforms and all other aviation accessories.

IV. The periods in which scrapping of vessels is to be effected are as follows:

(a) In the case of vessels to be scrapped under the first paragraph of Article II, the work of rendering the vessels incapable of further warlike service, in accordance with paragraph III of this Part, shall be completed within six months from the coming into force of the present Treaty, and the scrapping shall be finally effected within eighteen months from such coming into force.

(b) In the case of vessels to be scrapped under the second and third paragraphs of Article II, or under Article III, the work of rendering the vessel incapable of further warlike service in accordance with paragraph III of this Part shall be commenced not later than the date of completion of its successor, and shall be finished within six months from the date of such completion. The vessel shall be finally scrapped, in accordance with paragraph II of this Part, within eighteen months from the date of completion of its successor. If, however, the completion of the new vessel be delayed, then the work of rendering the old vessel incapable of further war-like service in accordance with paragraph III of this Part shall be commenced within four years from the laying of the keel of the new vessel, and shall be finished within six

months from the date on which such work was commenced, and the old vessel shall be finally scrapped in accordance with paragraph II of this Part within eighteen months from the date when the work of rendering it incapable of further warlike service was commenced.

PART 3. - Replacement

The replacement of capital ships and aircraft carriers shall take place according to the rules in Section I and the tables in Section II of this Part.

SECTION I. - RULES FOR REPLACEMENT

(a) Capital ships and aircraft carriers twenty years after the date of their completion may, except as otherwise provided in Article VIII and in the tables in Section II of this Part, be replaced by new construction, but within the limits prescribed in Article IV and Article VII. The keels of such new construction may, except as otherwise provided in Article VIII and in the tables in Section II of this Part, be laid down not earlier than seventeen years from the date of completion of the tonnage to be replaced, provided, however, that no capital ship tonnage, with the exception of the ships referred to in the third paragraph of Article II, and the replacement tonnage specifically mentioned in Section II of this Part, shall be laid down until ten years from November 12, 1921.

(b) Each of the Contracting Powers shall communicate promptly to each of the other Contracting Powers the following information:

(1) The names of the capital ships and aircraft carriers to be replaced by new construction;

(2) The date of governmental authorization of replacement tonnage;

(3) The date of laying the keels of replacement tonnage;

(4) The standard displacement in tons and metric tons of each new ship to be laid down, and the principal dimensions, namely, length at waterline, extreme beam at or below waterline, mean draft at standard displacement;

(5) The date of completion of each new ship and its standard displacement in tons and metric tons, and the principal dimensions, namely, length at waterline, extreme beam at or below waterline, mean draft at standard displacement, at time of completion

(c) In case of loss or accidental destruction of capital ships or aircraft carriers, they may immediately be replaced by new construction subject to the tonnage limits prescribed in Articles IV and VII and in conformity with the other provisions of the present Treaty, the regular replacement program being deemed to be advanced to that extent.

(d) No retained capital ships or aircraft carriers shall be reconstructed except for the purpose of providing means of defense against air and submarine attack, and subject to the following rules: The Contracting Powers may, for that purpose, equip existing tonnage with bulge or blister or anti-air attack deck protection, providing the increase of displacement thus effected does not exceed 3,000 tons (3,048 metric tons) displacement for each ship. No alterations in side armor, in calibre, number or general type of mounting of main armament shall be permitted except:

(1) in the case of France and Italy, which countries within the limits allowed for bulge may increase their armor protection and the calibre of the guns now carried on their existing capital ships so as not to exceed 16 inches (406 millimeters) and

(2) the British Empire shall be permitted to complete, in the case of the Renown, the alterations to armor that have already been commenced but temporarily suspended.

Com o apoio da Comissão Coordenadora da Evocação do Centenário da I Guerra Mundial

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