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Land armaments in Europe, 1866-1914

Book section

Original citation:

Originally published in Mahnken, Thomas; Maiolo, Joseph; Stevenson, David, *Arms Races in International Politics: From the Nineteenth to the Twenty-First Century*. Oxford, UK : Oxford University Press, 2016, pp. 41-58.

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Available in LSE Research Online: January 2016

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Chapter 2: Land Armaments in Europe, 1860-1914¹

This chapter will test out the leading interpretative approaches to arms races by focusing on three periods of intense and competitive land armaments build-up in Continental Europe: 1866-70, 1887-93, and 1910-14. First, it will examine the biggest and best known of these episodes, the land armaments contest that preceded the First World War. Second, it will make comparisons with the 1860s rivalry that culminated in the Franco-Prussian War. Finally, it will consider a third and less well-known instance, that of the late 1880s, which began by displaying similar characteristics but whose outcome was a relatively stable military balance at a higher level of preparedness. Although it will identify both commonalities and points of contrast, among its key concerns will be the question of what makes arms races dangerous.

- I - 1910-1914

Nineteenth-century arms races have been less closely studied than their twentieth-century counterparts.² None the less, the graph of European military expenditure between the Franco-Prussian and the First World War highlights an upsurge in the half decade before 1914.³ In money terms, spending by the six European Great Powers rose between 1908 and 1913 by about 50 per cent. This was less dramatic than in the 1930s, and expenditure as a percentage of Gross National Product remained much lower than in the run-up to 1939 or during the acutest phases of the Cold War, but by pre-1900 standards both the rate of increase and the proportionate military burden were high.⁴ Certainly, defence outlays were divided between armies and navies, but the biggest pre-1914 naval race (that between Britain and Germany) was losing impetus on the eve of hostilities.⁵ It follows that land armaments expansion was primarily responsible for the overall increase. Although Britain kept its army expenditure stable, and Italy between 1911 and 1913 was distracted by a costly conflict in Libya, the four big Continental land Powers were engaged in a reciprocal and competitive sequence of measures that pitted the German/Austro-Hungarian (1879) alliance bloc on the one hand against the Franco-Russian (1891-94) alliance

¹ The following abbreviations have been used in this chapter: BA (Bundesarchiv); CGS (Chief of the General Staff); CSDN Conseil supérieur de la défense nationale; *DDF* Commission de publication des documents relatifs aux origines de la guerre de 1914, *Documents diplomatiques français 1871-1914* (41 vols, Paris, 1929-59); *GP* Johannes Lepsius, Albrecht-Mendolssohn Bartholdy, and Friedrich Thimme, eds, *Die große Politik der europäischen Kabinette 1871-1914* (40 vols, Berlin, 1922-27); PAAA (Politisches Archiv des Auswärtigen Amtes, Berlin); SHA (Service historique de l'armée de terre, Vincennes); TNA The National Archives, Kew. The author is grateful for comments made by Professor Stephen A. Schuker.

² Cf. Stig Förster, 'Facing "People's War": Moltke the Elder and Germany's Military Options after 1871', *Journal of Strategic Studies*, 10, 2 (1987), p. 218.

³ For expenditure figures, John Hobson, 'The Military-Extraction Gap and the Wary Titan: the Fiscal Sociology of British Defence Policy, 1870-1913', *Journal of European Economic History*, 22 (1993), pp. 461-506; David Stevenson, *Armaments and the Coming of War: Europe, 1904-1914* (Oxford, 1996), pp. 2-8. On the pre-1914 arms race see also David G. Herrman, *The Arming of Europe and the Making of the First World War* (Princeton, 1996) and Dieter Storz, *Kriegsbild und Rüstung vor 1914. Europäische Landstreitkräfte vor dem Ersten Weltkrieg* (Herford, 1992).

⁴ Stevenson, *Armaments*, p. 3.

⁵ Cf. Matthew S. Seligmann, 'The Anglo-German Naval Race, 1898-1914', chapter 1 in this volume.

bloc on the other. This land arms race bore more directly than did the Anglo-German naval race on the causation and timing of the outbreak of war.

The origins of the land armaments race therefore matter. They may be examined with reference to each of the three main interpretations conventionally employed in armaments studies:

Technological Imperative. Technological change was central to the development of the Anglo-German naval race, but more peripheral on land. Two recent innovations had necessitated wholesale re-equipping: the magazine rifle from the late 1880s and the quick-firing recoilless field gun from the late 1890s, starting with the French 75mm. But both re-equipments had substantially been completed before the pre-war land arms race began, and although by 1910 new weapons were becoming available they contributed little to the expenditure surge. Machine guns are the most obvious instance, and European armies adopted them as standard after 1905, but only in small numbers.⁶ Quick-firing mobile heavy artillery (as distinct from field guns) cost more, but formed a category in which Germany was largely unrivalled, neither France, nor Russia, nor Austria-Hungary acquiring large quantities before war broke out. Similarly, airships and aircraft were coming into service as spectacular items that, however, counted for little in the spending totals.⁷ If the land arms race had continued beyond 1914, in contrast, equipment outlays would probably have been much bigger, notably on fortifications and on railways.⁸ France and Russia agreed in 1913 on a major programme of railway construction in Poland; the German authorities considered a counter-programme, as did Austria-Hungary in response to growing insecurity in Bosnia-Herzegovina. The French were updating their eastern frontier fortifications, especially round Verdun, and in 1912 the Germans decided to do likewise on their Russian border. Neither railways nor reinforced concrete cupola fortresses, however, were technologically novel. What was envisaged was fresh investment in established weapons systems; and this investment, in any case, the war forestalled. Moreover, as France's 75 mm field gun and Britain's HMS *Dreadnought* both show, technological advances often resulted from state initiatives, and to view technology as an entirely independent variable is misleading.

Although the pre-war land arms race was partly a drive for more equipment,⁹ it was essentially a competition for heightened military readiness, to be achieved by organizational changes (such as modifying mobilization procedures) but primarily by maximizing trained manpower both in the standing army and in the reserves, through a combination of extending conscription service terms and calling up more men in each age cohort. In Samuel Huntington's terminology, this race was quantitative rather than qualitative.¹⁰ Its most visible embodiment was a succession of new army

⁶ Herrmann, *Arming*, pp. 68-70; Paul Cornish, *Machine Guns and the Great War* (Barnsley, 2009), pp. 23ff.

⁷ Herrmann, *Arming*, pp. 75-7, 90-92.

⁸ David Stevenson, 'War by Timetable? The Railway Race before 1914', *Past & Present*, 162 (1999), pp. 163-94; 'Fortifications and the European Military Balance before 1914', *Journal of Strategic Studies*, 35, 6 (2012), pp. 829-59.

⁹ Equipment items probably accounted for less than a quarter of Continental European army budgets before 1914, Stevenson, *Armaments*, p. 10n.

¹⁰ Samuel Huntington, 'Arms Races: Prerequisites and Results', repr. in Robert J. Art and Kenneth N. Waltz, eds, *The Use of Force: Military Power and International Politics* (Lanham, Maryland, 1983), p. 469.

laws, passed by Germany in 1912 and 1913, by Austria-Hungary also in 1912 and in 1914, by France in 1913, and by Russia in 1914. Smaller countries (notably Belgium with a law in 1913) also participated.¹¹ Because the arms race took this form it is impossible to understand it without reference to domestic politics, which leads us to the second interpretative approach.

Domestic Politics/Military-Industrial Complex. During the first decade of the twentieth century, army budgets and peacetime strengths grew only very slowly or were static or even declining. The reasons varied. In Germany the naval build-up received priority (as it did in Britain): the General Staff favoured army expansion but the War Ministry feared enlargement would diminish manpower quality and make the army less reliable for internal repression.¹² In Austria-Hungary the General Staff also favoured expansion, but was blocked by opposition, on financial and other grounds, from the governments of the Austrian and Hungarian halves of the Dual Monarchy.¹³ Between 1904 and 1911, moreover, despite supposedly being allies, Austria-Hungary and Italy were diverting resources into an arms race against each other, building fortifications in the Alps and battleships for the Adriatic.¹⁴ In France the military leadership was under attack because of its involvement in the Dreyfus Affair, and a 1905 law shortened the active infantry service term from three years to two.¹⁵ Finally Russia, after its 1904-05 defeat by Japan, not only diverted half its rearmament equipment budget to the navy but also suffered four years of poor harvests and budgetary stringency, while peasant unrest required several infantry divisions to be redeployed to the interior and dissension spread into the army.¹⁶ In turn, the evidence that Russia could not threaten Central Europe weakened the advocates in Berlin and Vienna of military expansion, thus completing the circle.

All the pre-1914 Powers were relatively open societies, with elected legislatures and uncensored media. Army laws were expensive and removed more sons and husbands from their families and employees from their workplaces. They therefore tended to be unpopular, and business lobbyists were too weak unaided to force up military production targets. Pre-1914 armaments manufacture was a mixed economy in which state arsenals operated alongside private enterprises that had grown up since the mid-nineteenth century, such as Armstrong and Vickers in Britain, Schneider in France, Krupp in Germany, Škoda in Austria, and Putilov in Russia. To operate at full capacity they had to supplement domestic demand by export orders. Most of them were more committed to warship than to army supply, however, and even Krupp – the largest and best-connected armaments firm in Europe – made higher profits on its

¹¹ David Stevenson, 'Battlefield or Barrier? Rearmament and Military Planning in Belgium, 1902-1914', *International History Review*, 29, 2 (2007), pp. 473-507.

¹² Cf. generally Stig Förster, *Der doppelte Militarismus: die deutsche Heeresrüstung zwischen Status-Quo-Sicherung und Aggression, 1890-1913* (Stuttgart, 1985).

¹³ In addition there was an internal crisis in 1904-06 over Hungarian demands for the use of Magyar as a language of command, Gunther E. Rothenberg, *The Army of Francis Joseph* (West Lafayette, Indiana, 1976), chs. 9-10.

¹⁴ Michael Behnen, *Rüstung-Bündnis-Sicherheit: Dreibund und informeller Imperialismus, 1900-1908* (Tübingen, 1985).

¹⁵ Douglas Porch, *The March to the Marne: the French Army 1871-1914* (Cambridge, 1981), chs. 4, 5, 10.

¹⁶ K. F. Shatsillo, *Russkii imperializm i razvitie flota nakanune pervoi mirovoi voiny (1906-1914gg)* (Moscow, 1968), pp. 65-9; Stevenson, *Armaments*, pp. 77-8.

naval than on its land artillery arm.¹⁷ None the less, in the winter of 1911-12 the German authorities decided on a *Rüstungswende* or 'armaments turning point' whereby their expenditure priority switched from dreadnoughts to the army.

The Action-Reaction Model. This leads on to the third approach: the action-reaction model of a spiral of reciprocal armaments increases in response to perceived external threats. In itself it is a descriptive metaphor carrying little explanatory weight, as it fails to account for how the upward spiral starts in the first place. It none the less remains the most applicable of the three to the pre-1914 land armaments race, but only if located within the context of the shifting Continental strategic balance and of Europe's diplomatic alignments and flashpoints.

The first fundamental to bring into the equation is Russia, whose power position collapsed after the Japanese war but then bounced back. Between 1904 and 1908 the Central Powers of Austria-Hungary and Germany were unusually secure. After 1909, in contrast, a run of good harvests defused Russian internal unrest and boosted government revenue, much of which the tsarist authorities channelled into rearmament.¹⁸ These factors enabled the Russian military reorganization of 1910, the development with the best claim to be the starting pistol for the pre-war land armaments race. Its central feature was the adoption of a territorial mobilization system enabling the army to transition faster from peacetime to wartime strength, prior to the 'concentration' or troop transports to the deployment zone. Admittedly the centre of gravity of the peacetime force distribution was simultaneously pulled back eastwards from the tip of the Polish salient toward the base, and Russia's 1910 concentration plan was cautious and defensive. The reorganization's architects hoped to increase the army's efficiency for operations in any direction rather than specifically against the Central Powers.¹⁹ But in Berlin and Vienna it was the speedier mobilization that focused attention.²⁰ Moreover, Russia's revival was only just beginning. In 1912 the Russians adopted a much more aggressive war plan. They intensified their staff conversations with the French and in December 1913 they concluded a railway agreement that by 1917-18 would enable them to transport their mobilized divisions up to 30 per cent faster to the deployment zone.²¹ On 7 July 1914 their legislature gave final approval to the 'Great Programme' for reinforcing the army.²²

The impact of the tilting military balance was amplified by the pre-war diplomatic crises. The interaction between these crises and rearmament was integral to the dynamics of international politics in the period, the first and second Moroccan crises of 1905-06 and 1911 being followed by the Bosnian annexation crisis of 1908-09 and the 'winter crisis' accompanying the First Balkan War in 1912-13. These crises came ever faster, and each was more acute than its predecessor. Each was also more militarized, prompting greater military preparations, so that across Europe nearly

¹⁷ Stevenson, *Armaments*, pp. 22-6.

¹⁸ Cf. Peter W. Gatrell, *Government, Industry, and Rearmament in Russia, 1900-1914: the Last Argument of Tsarism* (Cambridge, 1994).

¹⁹ Vladimir A. Sukhomlinov, *Erinnerungen* (Berlin, 1924), pp. 228-331, 333.

²⁰ Riste Ropponen, *Die Kraft Russlands: wie beurteilte die politische und die ilitärische Führung der europäischen Grossmächte in der Zeit von 1905 bis 1914* (Helsinki, 1968), p. 241; report by GGS Abt. 1, 14 Nov. 1910, PAAA R.10450.

²¹ Moltke to Bethmann, 15 Dec. 1913, 11 July 1914, PAAA R.11011.

²² GGS 1. Abt., 4 July 1914, 'Die wachsende Macht Russlands', PAAA R.996.

three quarters of a million men above the normal peacetime quotas were with the colours by early 1913.²³ The First Moroccan Crisis encouraged a temporary burst of re-equipment in France and Germany but its effects were otherwise limited, although it did encourage Britain to strengthen its ties with Russia and France. The Bosnian annexation crisis had more serious consequences because Russia found itself unable to risk a war and was therefore humiliated, which spurred its leaders towards rearmament and the reorganization of 1910. The Second Moroccan, or Agadir, Crisis, conversely, led directly to the Germans' *Rüstungswende* decision to prioritize land rearmament at the navy's expense. Finally, the First Balkan War precipitated a new power shift in the Balkans, where Russia's protégés, Serbia and Montenegro, seized territory from Ottoman Turkey and menaced Austria-Hungary's southern frontier. Not only did the Balkan crisis end the Hungarians' resistance to army increases; it also encouraged Germany to introduce another bill, which became the army law of 1913. This measure in turn prompted France to revert from two-year to three-year active service, as well as to approve a major equipment credit; while the Russians (though here the connection with the Balkans was less direct) introduced their 'Great Programme' for army expansion over four years.

The public discourse of the period (particularly the legislative debates) confirms that by 1913 the Powers were responding to the international political environment rather than to technological changes or internal pressures. It is true that the internal pressures were greater than previously, but this was primarily because the diplomatic crises had inflamed popular nationalism. The 'nationalist revival' in France in 1912-13, and the formation in 1912 of the *Deutscher Wehrverein* (German Defence League), which grew to 360,000 affiliated members and lobbied for a big army increase, are the best examples. However, even the 1913 German military law was less than the DWV wanted, and armaments competition also strengthened opposition to military preparedness from socialists and progressives. In fact it polarized public opinion, even if on balance by 1912-13 the domestic obstacles to military legislation had lessened.

The confidential files shed more light on the real motives for the arms increases. These were partly deterrence. The Austro-Hungarian Government believed that the Bosnian frontier was too exposed to Serbian attack, and wanted to safeguard it by rail construction and larger protection forces. Reinforcement against surprise of the 'couverture' or covering garrison was also a professed justification for France's three-year service law. But a second objective was more successful crisis management if further trials of strength none the less occurred. Russia is the outstanding example: the tsarist authorities in autumn 1912 first conducted a 'trial mobilization' and then omitted to release as normal their oldest conscript cohort, thus boosting their standing army by 350,000 men.²⁴ Conversely one of the arguments invoked for the German 1912 army law was disappointment over the 1911 Agadir Crisis, which suggested that Germany's navy was ineffective as a means of political pressure and a reinforced army might do better.

²³ David Stevenson, 'Militarization and Diplomacy in Europe before 1914', *International Security*, 22, 1 (1997), pp. 125-61.

²⁴ Louis to Poincaré, 2 Jan. 1913, *DDF* 3ème ser. V, doc. 154.

The final purpose behind the land build-up, however, was to improve the chances of victory if deterrence and crisis management failed.²⁵ A change in the tone of confidential memoranda can be detected as tension mounted and successive alerts accustomed leaders to contemplating the eventuality of hostilities. Thus the Russians prepared a scheme known as the 'Period Preparatory to War' for accelerating mobilization, which German intelligence would detect when it was implemented in July 1914.²⁶ In addition, the new armaments measures were connected with developments in strategic planning. France is the best example, the three-year law being intended partly to prepare the army for the headlong offensive into Germany entailed in the 1913-14 Plan XVII, which replaced a previous counterstroke scheme. Russia similarly in its concentration schedule '19 revised' of 1912 and its schedule 20 of 1914 adopted plans for an immediate double invasion of Austria-Hungary and of Germany instead of its previous defensive-offensive strategy.²⁷ The Germans, conversely, had long intended to start by throwing their main forces westwards and invading France via Belgium.²⁸ But their 1912 and 1913 army laws and their 1914 plans for eastern fortifications and trunk railway building were intended to maintain that strategy's viability when the General Staff believed the altering strategic balance threatened to undermine it.

The Anglo-German naval race was a major reason for the British Government's and public's acceptance of war with Germany.²⁹ Moreover, the German authorities in 1914 may have been encouraged to risk hostilities before the ratio in capital ships moved further against them.³⁰ But the land arms race more directly influenced the decisions that escalated a Balkan crisis into a European war. In the Balkans a local armaments competition had been under way since 1906 between Austria-Hungary on the one hand and Serbia and Montenegro on the other. The Balkan Wars of 1912-13 had run down Serbia's finances, weapons, and ammunition, and in spring 1914 it was searching desperately for rifles. 'Apis' (Dragutin Dimitrijević), the head of the Black Hand organization in Belgrade that supplied the Sarajevo assassins with their bombs and revolvers, may have mistakenly supposed the Archduke Franz Ferdinand to be the leader of the war party in Vienna, and have hoped by killing him to postpone a

²⁵ This point is controversial. However, the evidence does not seem conclusive to this author that the German leaders engaged on land rearmament with the deliberate and premeditated intention of provoking a general European war, although the *possibility* of doing so was under consideration as an option from at least 1912. Cf. David Stevenson, 'Was a Peaceful Outcome Thinkable? The European Land Armaments Race before 1914', in Holger Afflerbach and David Stevenson, eds, *An Improbable War? The Outbreak of World War I and European Political Culture before 1914* (New York/Oxford, 2007), ch. 7.

²⁶ Stevenson, *Armaments*, pp. 316, 383; cf. Sean McMeekin, *The Russian Origins of the First World War* (Cambridge, MA/London, 2011), pp. 61ff. However, the Preparatory Period was not tantamount to mobilization. See Antony Heywood, 'Russia's "Secret Mobilization" in July 1914' (in Russian), *Rodina*, 28 May 2013.

²⁷ On war plans, Jack Snyder, *The Ideology of the Offensive: Military Decisionmaking and the Disasters of 1914* (Ithaca, NY, 1984); Richard F. Hamilton and Holger Herwig, eds, *War Planning 1914* (Cambridge, 2010); Bruce Menning, 'Russian Military Intelligence, July 1914: What St Petersburg Perceived and Why it Mattered', *The Historian*, 77, 2 (July 2015, forthcoming).

²⁸ For the 'Zuber debate' on German pre-war planning, see, inter alia, Hans Ehlert, Michael Epkenhans, and Gerhard P. Groß, eds, *Der Schlieffenplan: Analyse und Dokumente* (Paderborn, 2007), especially the documents appended, pp. 394ff.

²⁹ Cf. the conclusion of the reappraisal by Jan Rüger, 'Revisiting the Anglo-German Antagonism', *Journal of Modern History*, 83, 3 (2011), pp. 579-617.

³⁰ Cf. Seligmann, 'Anglo-German Naval Race', chapter 1.

showdown with Austria-Hungary; but his actions had the opposite effect.³¹ For Austria-Hungary, conversely, 1914 was a relatively favourable moment for Balkan operations, though launching a European war - as even the ultra-hawkish CGS Franz Conrad von Hötzendorff acknowledged - was a desperate gamble, conceivable only if Germany endorsed it. But this the Germans did. The Prussian War Minister Erich von Falkenhayn advised in July 1914 that his army was ready;³² CGS Helmuth von Moltke the Younger had briefed Chancellor Theobald von Bethman Hollweg that the 1913 military law was already largely implemented and the German army stood in a relatively strong position, whereas the 1913 military service extension had temporarily diluted the quality of the French army, which also lacked a good modern rifle or sufficient heavy artillery.³³ By 1916, in contrast, the French military reforms would be taking effect, and by 1917-18 strategic railway building would enhance the Russian army's striking power and the Great Programme would enlarge its mobilized strength and its artillery, while the 1913 Belgian military law would reinforce the garrisons of the Liège and Namur fortresses that German planning required to be seized quickly. Conversely, the expense first of the dreadnought race and then of land rearmament had pushed the German Reich finances into deficit, and the 1913 army law had been paid for by a one-off wealth tax that had needed Socialist support to pass through the Reichstag. Further rounds of spending would politically be extremely difficult for Germany and Austria-Hungary to finance, but less so for Russia, France, and Britain.³⁴

If the German army had reasons to act quickly, for France and Russia war had been inconceivable five years earlier but now they felt able to risk hostilities rather than back down. In 1905 the French Premier had sacked his foreign minister rather than resist Germany's demands; in 1908-09 Russia had acquiesced in Austria-Hungary's annexation of Bosnia in large part because its armed forces were in no condition to risk a European war. But by 1911-12 French General Staff appraisals were becoming more confident that France and Russia could win such a war, and they communicated their optimism to St Petersburg.³⁵ In July 1914 the Russian War and Navy Ministers supported the Foreign Minister in a policy of firmness, and were even enthusiastic about the possibility of hostilities.³⁶ The French President, Raymond Poincaré, may have feared that after a swing to the left in recent elections the National Assembly would weaken the Three-Year Law that autumn.³⁷ In Britain the Cabinet appears not to have sought a military appraisal, but the Director of Military Operations, Sir Henry Wilson, was familiar with French thinking,³⁸ and Prime Minister Herbert Asquith and

³¹ D. Mackenzie, *Apis: the Congenial Conspirator – The Life of Colonel Dragutin T. Dimitrijević* (New York, 1989).

³² Reichsarchiv, *Der Weltkrieg 1914-1918: Kriegsrüstung und Kriegswirtschaft*, Vol. I (Berlin, 1930), p. 25; Holger Afflerbach, *Falkenhayn: politisches Denken und Handeln im Kaiserreich* (Munich, 1996), p. 149.

³³ Moltke to Bethmann, 9 Mar. 1914, BA Rklei R.43F/107. The French implemented the measure by calling up two new conscript cohorts in autumn 1913, meaning that two thirds of the men under arms were freshly conscripted.

³⁴ Niall Ferguson, 'Public Finance and National Security: the Domestic Origins of the First World War Revisited', *Past & Present*, 142 (1994), pp. 141-68.

³⁵ CSDN, Section d'études, Note de présentation, 9 Jan. 1912, SHA 2.N.1.

³⁶ Dominic C. B. Lieven, *Russia and the Origins of the First World War* (Basingstoke, 1983), pp. 141-44.

³⁷ Gerd Krumeich, *Armaments and Politics in France on the Eve of the First World War* (Eng. transl., Leamington Spa, 1984), p. 214.

³⁸ Keith Jeffery, *Field Marshal Sir Henry Wilson: a Political Soldier* (Oxford, 2006), pp. 102-4.

Foreign Secretary Sir Edward Grey were aware of an Admiralty economic warfare scheme that aimed to paralyse Germany's trading and financial system.³⁹ The key point is that both sides saw the Central Powers as being on a downward trajectory and their opponents as on an upward one, and this perception encouraged them first to risk and then to accept hostilities. The armaments race and the associated shift in the military balance by no means constitute a sufficient explanation of the outbreak of war, but they did form a necessary precondition for it and are critical to an understanding of its timing.

-II- 1866-1870

We now turn to the arms race before the Franco-Prussian war of 1870. In this period the diplomatic alignments were more fluid, and the contest not between two coalitions but between Prussia (after 1867 the North German Confederation) and the French Second Empire. Whereas the pre-1914 land armaments race was primarily qualitative and in manpower, that before 1870 was qualitative as well as quantitative and took place against the backdrop of the introduction of steel, breech-loading weapons with rifled barrels both for the infantry (to replace the smooth-bore muzzle-loading musket) and for the field artillery, at the same time as railways were adopted for deployment and supply.⁴⁰ Despite these contrasts between the two periods, however, there were also striking similarities, especially in the relationship between the armaments race and the outbreak of hostilities.

At the beginning of the 1860s most observers considered the French army to be the best in Europe. This judgement seemed borne out by its performance in the Crimean War and by its victories over Austria in the Italian war of 1859. In the latter year Prussia's partial mobilization in support of Austria had exposed serious weaknesses in its mobilization system, which the new team of Regent Wilhelm (later King Wilhelm I), War Minister Albrecht von Roon, and CGS Helmuth von Moltke the Elder was determined to remedy.⁴¹ Initially their rearmament efforts were intended to reinforce the country's military power in general, and as a precaution against war with France, Russia, or Austria rather than against France particularly. The Prussian army had been the first in Europe to introduce a breech-loading rifle – the Dreyse needle gun (*Zundnadelgewehr*) – as its standard infantry weapon, in a transition that proceeded gradually from 1843 onwards.⁴² Moltke stepped up planning to use railways for mobilization and concentration, and tested it in exercises.⁴³ But Wilhelm's key concern was manpower. Prussia was unusual in having preserved a short-service mass conscription system after the Napoleonic wars: under the law of 1814 men served three years in the standing army and two in its reserves before transferring to the second-line *Landwehr*, but the mass was not very mass and the standing army had

³⁹ Nicholas A. Lambert, *Planning Armageddon: British Economic Warfare and the First World War* (Cambridge, Mass., 2012), pp. 176-8.

⁴⁰ On the mid-nineteenth century military revolution, William McElwee, *The Art of War: Waterloo to Mons* (London, 1974), ch. 4; William H. McNeill, *The Pursuit of Power: Technology, Society, and Armed Force since AD 1000* (Oxford, 1983), ch. 7.

⁴¹ Michael Howard, *The Franco-Prussian War: the German Invasion of France, 1870-1871* (London, 1961), pp. 19-20; Dennis Showalter, *The Wars of German Unification* (London, 2004), pp. 69-82.

⁴² *Ibid.*, p. 5.

⁴³ Arden Bucholz, *Moltke, Schlieffen, and Prussian War Planning* (New York and Oxford, 1991), pp. 39-43.

lagged behind the country's growth in population.⁴⁴ The 1860 reform bill would lower the military service term to three years, but expand the conscript uptake and place regular officers in command of the *Landwehr* units.⁴⁵ It aimed to strengthen the standing army but also to align the *Landwehr* more closely with the standing force in equipment, training, and discipline. Wilhelm had a domestic agenda - he remembered the 1848 revolution and wanted to strengthen royal power relative to the progressive liberal opposition - but in addition he and his advisers sought to counter Prussia's exposed geographical position and enhance its diplomatic leverage. According to the British military attaché, the law would have not been worth the trouble were it not for the need 'to enable Prussia as a first-rate power to maintain her position amongst other European nations'.⁴⁶ None the less, liberal parliamentarians concerned about the internal political balance resisted the measure, and Prince Otto von Bismarck was brought in as Minister-President in 1862 in order to impose it.⁴⁷ Only after Prussia defeated Austria in the Six-Weeks War of 1866 did the liberals split, the majority voting to justify retrospectively the government's actions by means of the 1867 Indemnity Law.⁴⁸ As after 1910, in fact, external events generated popular support for arms increases, rather than the other way round. The needle gun, the speed of railway-backed mobilization and concentration, and the new increments of trained manpower all contributed to Prussia's rapid and unexpected victory over Austria in 1866 at the Battle of Sadowa/Königgrätz.⁴⁹

It was after 1866 that France responded, and this year should therefore be seen as the beginning of the Franco-German arms race. During the Revolutionary Wars France had pioneered the principle of universal liability to military service, but under the post-1815 Restoration it had reverted to a long-service system, and even after Napoleon III established the Second Empire the pace of military change was slow. Part of the explanation was that Napoleon had also been engaged in a naval race against the British, which had now lost impetus.⁵⁰ But in addition, conservative professional opinion held that a long-service army was a more effective fighting force, and better able to adapt to the incoming new weaponry. France had a system of seven-year engagements, and many of its soldiers were battle hardened, but unlike their Prussian counterparts they could not be rapidly reinforced. During the war of 1866 Napoleon felt he lacked the capacity for timely intervention in Central Europe, and at a summit conference at Compiègne in November he insisted on a manpower

⁴⁴ In 1814 the standing army stood at one eightieth of the population; by 1857 it stood at one one hundred and seventeenth. Hamilton to Russell, 22 Feb. 1862, TNA FO/64/534.

⁴⁵ Gordon A. Craig, *The Politics of the Prussian Army, 1640-1945* (London: Oxford University Press, 1964), pp. 138ff.; John Gooch, *Armies in Europe* (London, 1980), pp. 87ff.; Showalter, *Wars of German Unification*, pp. 66ff. For detailed analyses, interpreting the primary purpose of the reform as being to gain leverage against Austria, Crowe to Russell, 1, 8 Oct., and 3 Dec. 1859, TNA, FO/64/484; Hamilton to Russell, 22 Feb. 1862, TNA FO/64/534.

⁴⁶ Hamilton to Russell, 22 Feb. 1862, TNA FO/64/534.

⁴⁷ Craig, *Prussian Army*, pp. 163-4.

⁴⁸ *Ibid.*, pp. 159ff.

⁴⁹ Gordon A. Craig, *The Battle of Königgrätz: Prussia's Victory over Austria, 1866* (Philadelphia: repr., 2003). The Roon reform increased the Prussian army's war strength from 532,700 to 615,900, Manfred Messerschmidt, 'The Prussian Army from Reform to War' in Stig Förster and Jorg Nagler, eds, *On the Road to Total War: the American Civil War and the German Wars of Unification, 1861-1871* (Cambridge, 1997), p. 266.

⁵⁰ Ian Hamilton, *Anglo-French Naval Rivalry 1840-1870* (Oxford and New York, 1993), ch. 8.

increase.⁵¹ His regime, however, was in transition from an autocratic to a parliamentary system. After 1866 French public opinion switched rapidly to viewing the new North German Confederation as the principal threat to national security, a perception that would endure for the next eighty years.⁵² Yet this perception did not translate into support for a larger conscript cohort, and Napoleon encountered opposition both from the legislators and from the high command, on the grounds that his reform would increase burdens on civilians and diminish military effectiveness.⁵³ Initially he wanted to be able to call up all able-bodied men for service either in the standing army or in the reserves, but the *loi Niel* steered through by War Minister General Adolphe Niel in 1868 fell short of the Emperor's hopes and primarily reinforced the second-line troops of the *garde nationale mobile*.⁵⁴ In contrast, French equipment spending rose sharply and had tangible consequences: the issue of one million chassepot rifles (which were superior to the needle gun), as well as of smaller numbers of prototype machine guns (*mitrailleuses*).⁵⁵

These French efforts were insufficient to nullify the Germans' advantage, and after defeating Austria the latter took further steps. The armaments competition was now linked to an intensified political rivalry that generated a succession of crises. Napoleon unavailingly sought 'compensation' in the Low Countries for Prussia's new-won domination over northern Germany, and warned that further expansion into Southern Germany would constitute a *casus belli*. But Bismarck intended precisely such expansion, and already in 1867 the Prussian military system was extended to the other members of the emergent North German Confederation.⁵⁶ Whereas initially domestic calculations had contributed to the government's enthusiasm for reform, the external situation was now primary. Although the Prussians stuck with the now outdated needle gun, they replaced their artillery (which had proved inferior to the Austrian cannon) by new steel-barrelled Krupp breech-loaders, which the French failed to match.⁵⁷ Finally, the General Staff presided over further railway

⁵¹ Napoleon told the legislature that a nation's influence depended on the number of men it could put under arms, *ibid*, Richard D. Challener, *The French Theory of the Nation in Arms, 1866-1939* (New York, 1955), pp. 10-17. The French military authorities estimated that Prussia had 1.2 million trained men; France 288,000, Howard, *Franco-Prussian War*, p. 29.

⁵² Claude Digeon, *La Crise allemande de la pensée française* (Paris, 1959), pp. 24ff; Raymond Poidevin and Jacques Bariéty, *Les Relations franco-allemandes 1815-1975* (Paris, 1977), pp. 72-3; Summary of French 1866-67 military measures in cover letters for British attaché reports, TNA FO/27/1695.

⁵³ According to the British Embassy, the French people 'desired some measure which should once more reinstate them in the position of arbiters in Europe, which they believed to have given place to the supremacy of Prussia... an army more numerous, and at least as well disciplined and equipped, as any that Prussia could bring into the field.' Yet there was also strong opposition to calling up extra men, as well as to the cost: Fane despatch, 7 January 1867, TNA FO/27/1656.

⁵⁴ Thomas J. Adriance, *The Last Gaiter Button: a Study of the Mobilization and Concentration of the French Army in the War of 1870* (New York, Westport, and London, 1987), p. 31; Geoffrey Wawro, *The Franco-Prussian War: the German Conquest of France in 1870-1871* (Cambridge, 2003), p. 46. The law was intended to call up 172,000 men annually and create by 1875 a total mobilized strength of 800,000, Howard, *Franco-Prussian War*, p. 33. For Napoleon's initial plans, Claremont to Cowley, 11, 13 Dec. 1866, FO 25/1625.

⁵⁵ François Crouzet, 'Recherches sur la production d'armements en France (1815-1913)', *Revue historique*, 59 (1974), pp. 51, 54; Wawro, *Franco-Prussian War*, pp. 52-3.

⁵⁶ In 1870 the German states mobilized 1.184 million men, nearly twice the size of Napoleon I's *Grande armée* in 1812, Howard, *Franco-Prussian War*, p. 23.

⁵⁷ Before the war of 1866 the Krupp firm had been selling artillery to both Prussia and Austria, but in 1866 Alfred Krupp agreed very reluctantly not to sell guns against the wish of the Prussian

improvements, which ensured that in 1870 the Germans' mobilization was faster than ever and that in the opening battles their troops had a two to one superiority.⁵⁸

By the time of the crisis of July 1870, therefore, both sides' military chiefs had grounds for considering the moment favourable to take the plunge. Before doctoring the Ems Despatch – the crucial step that provoked France into declaring war – Bismarck consulted Moltke and Roon, who said that the army was ready. Moltke respected Niel and believed it was better to fight now than wait for the French to increase their manpower and modernize their weapons.⁵⁹ But the advice of Niel's successor General Edmond Leboeuf appears likewise to have been crucial for the French cabinet.⁶⁰ Notoriously, Leboeuf affirmed that the French army was ready 'to the last gaiter button', but he had reason to believe that reforms had made progress and that French infantry firepower had grown.⁶¹ Like Poincaré in 1914, he feared that soon the French legislature would impose retrenchment.⁶² The French also hoped that success in the first encounters would bring in Austria and Italy.⁶³ These forecasts proved to be completely mistaken, and whereas in 1914 Germany's military advantage really had been significantly eroded, in 1870 it had not.⁶⁴ None the less we can see again the imminence of a crossover point or power transition – one side moving downwards while the other moved up – as the dangerous time.

- III- 1887-1893

As a final example we may turn to an arms race that exhibited similar features to those of the 1910s and 1860s but did not end in war. Samuel Huntington, Grant Hammond, and Allan Mitchell have all discerned a Franco-German arms race after 1870, but they differ about its dating and on whether it merits inclusion in the canonical list.⁶⁵ After 1870 Franco-German diplomatic tensions persisted (war scares occurring in 1873 and especially 1875). The French expanded their conscript uptake

Government, Harold James, *Krupp: A History of the Legendary German Firm* (Princeton and Oxford, 2012), p. 59.

⁵⁸ Martin Kitchen, *A Military History of Germany: from the Eighteenth Century to the Present Day* (Bloomington, Indiana, and London, 1975), p. 123.

⁵⁹ Kitchen, *Military History*, p. 123; Howard, *Franco-Prussian War*, pp. 43, 54. The Ems Despatch recorded a conversation between King Wilhelm and the French Ambassador, Count Louis Benedetti. Before releasing the text for publication, Bismarck modified it so as to make it more likely that the French would interpret it as an insult and a humiliation.

⁶⁰ Richard Holmes, *The Road to Sedan: the French Army 1866-70* (London, 1984), p. 174; David Wetzel, *A Duel of Giants: Bismarck, Napoleon III, and the Origins of the Franco-Prussian War* (Madison, Wisconsin, 2001), pp. 121, 164.

⁶¹ Adriance, *Last Gaiter Button*, p. 35.

⁶² Indeed, it had already begun to do so: Howard, *Franco-Prussian War*, p. 39. On the Austro-Hungarian 1868 law, which set an annual quota of 95,000 and aimed at a war strength of 800,000, Rothenberg, *Army of Francis Joseph*, pp. 80-1; Adam Wandruszka and P. Urbanitsch, eds, *Die Habsburgermonarchie, 1848-1914*, Vol. V *Die bewaffnete Macht* (Vienna, 1987), p. 489.

⁶³ Holmes, *Road to Sedan*, p. 174.

⁶⁴ For an excellent summary, Geoffrey Wawro, *The Franco-Prussian War: the German Conquest of France in 1870-1873* (Cambridge, 2003), ch. 2.

⁶⁵ Huntington, 'Arms Races', p. 440; Grant T. Hammond, *Plowshares into Swords: Arms Races in International Politics, 1840-1991* (Columbia, South Carolina, 1993), pp. 106-9; Allan Mitchell, *Victors and Vanquished: the German Influence on Army and Church in France after 1870* (Chapel Hill: University of North Carolina Press, 1984); Allan Mitchell, *The Great Train Race: Railways and the Franco-German Rivalry, 1815-1914* (New York, 2000).

by a law of 1872, though in this respect still lagged behind the Germans.⁶⁶ They began upgrading their artillery, institutionalized strategic planning, and strengthened their network of trunk railways leading towards the north-eastern border. By 1890 they may have matched or even exceeded the Germans in transport capacity.⁶⁷ In addition, both sides invested heavily in fortifying their new post-1871 frontiers.⁶⁸ Other countries also adopted versions of the Prussian recruitment system, including Austria-Hungary in 1868, Russia in 1874, and Italy in 1871/76.⁶⁹ But apart from the French, who - as might be expected from a defeated Power - maintained much higher equipment spending than before 1866, the pace of military innovation in the 1870s was fairly gentle, in this reflecting a stable diplomatic constellation in which France was isolated.⁷⁰

From the mid-1880s, in contrast, we can see a new upsurge in army budgets, less dramatic than that of 1910-14 but displaying common features with it.⁷¹ In this period too, diplomatic tension accompanied a series of army bills. Again technological innovation was one element in spending increases, at this point primarily due to the introduction of the small-bore repeating magazine rifle using smokeless high-explosive propellants, which enabled a longer range and faster rate of fire without producing smoke clouds that betrayed the marksman's location. All the European infantries re-equipped themselves with these devices, starting with the French Lebel rifle in 1886, and continuing with the German *Gewehr* 88 (1888), the Austrian Mannlicher (1888), the Russian Mosin (1891), and the British Lee-Enfield (1895).⁷² Smokeless powder was one aspect of a broader transition from gunpowder to chemical explosives, which also threatened obsolescence for the brick and mortar fortresses that protected the French, German, Russian, and Austrian borders. In fact after a pause for reappraisal the Continental Powers continued to invest in fortification, but at more concentrated locations and with radically modified designs that centred on earth-protected installations of reinforced concrete. This, however, was not the main reason for the spending bulge.⁷³

⁶⁶ Challener, *French Theory*, pp. 33-44; David B. Ralston, *The Army of the Republic: the Place of the Military in the Political Evolution of France, 1871-1914* (Cambridge, Mass., and London, 1967), pp. 34-45.

⁶⁷ Stevenson, 'War by Timetable?', p. 175. Austria-Hungary upgraded its strategic network against Russia in Galicia, Rothenberg, *Army of Francis Joseph*, p. 111.

⁶⁸ Stevenson, 'Fortifications', pp. 841, 847-8.

⁶⁹ On Russia, John H. Keep, *Soldiers of the Tsar: Army and Society in Russia, 1462-1874* (Oxford, 1985), ch. 15; on Italy, John Gooch, *Army, State, and Society in Italy, 1870-1915* (Basingstoke, 1989), ch. 2.

⁷⁰ H.Brackenbury, 'General Sketch of the Situation Abroad and at Home from a Military Standpoint, 3 August 1886', TNA WO/33/46 describes a position of stable German dominance – though the German leaders themselves were less confident.

⁷¹ German army spending per soldier fluctuated between 500 and 600 marks annually from 1812 to 1866, but reached 900 in 1875 and over 1,000 in 1887/88. The army budget doubled between 1886/87 and 1893/94. The army's peacetime strength rose from 427,000 in 1882/87 to 557,000 in 1893/99, Michael Geyer, *Deutsche Rüstungspolitik 1860-1960* (Frankfurt am Main, 1984) pp. 33, 52. The tables in William Fuller, *Civil-Military Conflict in Imperial Russia, 1881-1914* (Princeton, 1985), pp. 49-51, highlight the surges in German and Russian (though not French) military spending in these years. Austro-Hungarian spending also jumped in 1886-88: Wandruszka and Urbanitsch, eds, *Bewaffnete Macht*, pp. 590-1.

⁷² For German fears that France was regaining the advantage, Swaine memorandum, 26 Sept. 1887, TNA FO/881/5593.

⁷³ Stevenson, 'Fortifications', p. 831. In Belgium, however, a major investment was made between 1888 and 1891 in constructing fortress rings round Liège and Namur, but the forts were built shoddily,

Instead, the leading feature of the armaments race in this period too was a sequence of army laws, passed by France and by Austria-Hungary in 1889, and by Germany in 1887, 1888, 1890, and 1893. In the Balkans, Serbia and Bulgaria followed suit.⁷⁴ Italy's army budget reached its nineteenth-century peak in 1888-89, and although Russia did not pass legislation (before 1906 it had no elected parliament) it too expanded its standing army.⁷⁵ Generally the increases were smaller than in 1912-13, and the standard term of service with the colours was reduced (to three years in France and two in Germany), but these concessions to the legislatures were offset by cuts in the number of exemptions, so that the reserve of trained manpower would grow faster.⁷⁶ In Austria-Hungary the annual conscript cohort rose only by 7,500 to 103,100; but Germany's 1893 law marked the biggest increase the country had yet seen, and in France whereas previously only half the annual cohort had served for the full five-year term, now 70% would serve for three years.⁷⁷ Although parliaments were more willing to pass such legislation if the service term was shortened and exemptions were diminished, military service remained fundamentally unpopular. As after 1910, therefore, a menacing external political situation was needed before governments acted. In 1886-87 German anxiety once again centred on France, where a new War Minister, General Georges-Ernest Boulanger, intensified military preparedness and made inflammatory speeches that hinted at willingness for a war of revenge. The newly founded *Ligue des Patriotes* contributed to the xenophobic mood.⁷⁸ Tension reached a climax when the Germans arrested Guillaume Schnaebelé, a French frontier agent (though later releasing him). In Eastern Europe, the Hohenzollern and Romanov dynasties had traditionally formed a common front against Polish nationalism and against revolution, but the German authorities were alarmed by the growth of anti-German sentiments in Russia and the emergence of economic and diplomatic tensions between the two countries. Germany's ally, Austria-Hungary, was at loggerheads with Russia over Bulgaria, where Tsar Alexander III intervened unsuccessfully to back his candidate for the throne. War against Turkey in 1877-78 had disrupted Russia's state finances, and the tsarist government had to restrict its weapons and railway spending, but it compensated by massively reinforcing its Polish frontier garrison.⁷⁹ Whereas this development caused great anxiety in Berlin and Vienna,⁸⁰ Russian intelligence was alarmed by the extent of Austrian military preparations.⁸¹ In 1888 and 1889 Italy feared a French attack,⁸²

insufficiently garrisoned, and not kept updated. Clayton Donnell, *The Forts of the Meuse in World War I* (Oxford, 2007), pp. 9, 13.

⁷⁴ Fraser to Phipps, 11 Sept. 1889, TNA FO/881/5943.

⁷⁵ The Russian army's peacetime strength had averaged 35,000 officers and 850,000 men in 1881-85, but rose by 1894 to 35,000 officers and 940,000 men: Bruce Menning, *Bayonets before Bullets: the Imperial Russian Army, 1861-1914* (Bloomington, 1992), p. 108. On Italy, Gooch, *Army, State, and Society*, p. 58-9.

⁷⁶ C. à Court, 'Progress in the French Army in 1893'; E. Agar, 'Progress &c. in the German Army to the End of 1893', both January 1894, TNA WO/33/54.

⁷⁷ Rothenberg, *Army of Francis Joseph*, p. 109; Challener, *French Theory*, 60.

⁷⁸ For example, Waldersee to Bismarck, 16 Nov. 1886, *GP*, VI, doc. 1234.

⁷⁹ Between 1883 and 1893 the Russian garrison in Poland was raised from 227,000 to 610,000, a more forward deployment and higher readiness being seen as deterrents against attack: William C. Fuller, Jr., *Strategy and Power in Russia 1600-1914* (New York, 1992), pp. 342-43

⁸⁰ Russell to Malet, 1 Jan. 1891, TNA FO/881/6171; Paget to Salisbury, 11 Oct. 1888, TNA FO/7/1135; cf. Monts to Bismarck, 7 Nov. 1887, Deines report, 9 Nov. 1887, *GP*, VI, docs 1150, 1151.

⁸¹ Fuller, *Strategy and Power*, p. 336; cf. Alan J. P. Taylor, *The Struggle for Mastery in Europe, 1848-1918* (London, 1971), ch. 14.

and in 1890-91 a major diplomatic turning point occurred when after years of a developing Franco-Russian rapprochement Berlin failed to renew its 'Reinsurance Treaty' with St Petersburg and the latter negotiated a defensive alliance with Paris.

These diplomatic developments bore directly on the armaments history of the period, most evidently in Germany. Bismarck justified his 1886 *Septennat* (or seven-year army bill) as being necessary against the French threat, and eventually called an election on the issue.⁸³ His successor, Leo Count Caprivi, justified the 1893 law as a response to the shift in the balance in favour of France and Russia and as a means of controlling the Russians via deterrence. He too had to call a Reichstag election before he could pass the measure.⁸⁴ Duties on beer and spirits and on stock market transactions had to rise, but according to the British Ambassador, Germany's 'dislike of increased taxation [is] more than balanced by a perception of the necessity of keeping pace with the French armaments.'⁸⁵ Conversely, the French 1889 law was justified publicly on grounds of equalizing the conscription burden but also as a method of maximizing trained manpower, and the 1888-93 War Minister Charles-Louis de Freycinet introduced it as part of a complex of measures to enhance army effectiveness.⁸⁶ In the east, Russia's and Austria-Hungary's military efforts can be seen similarly as responses to the confrontation between them during the 1887 Bulgarian crisis.⁸⁷ In all these respects, similarities are evident with the European conjuncture at the time of the emergence of the pre-First World War land armaments race between 1908 and 1912.

In contrast to the later period, however, this intensification in the arms race did not culminate in hostilities. In 1870 and in 1914 the Berlin leaders went to war at a moment when their military superiority seemed to be coming under challenge, by French rearmament and by Franco-Russian rearmament respectively. In the late 1880s the German military chiefs had similar fears of being overhauled: the elder Moltke had advocated preventive war against France in 1875 and against Russia in 1887. But Bismarck overruled him on both occasions, and enjoyed the emperor's backing. The chancellor resisted launching a preventive war, even when (as in the winter of 1887-88) he was almost completely isolated. He maintained instead that rearmament could keep the peace.⁸⁸ He was assisted by disagreements within the military establishment

⁸² Gooch, *Army, State, and Society*, pp. 57, 60-1.

⁸³ Reichsarchiv, *Weltkrieg*, I, pp. 16-18; cf. Herbert to Flourens, 19 Dec. 1886, 14 Jan. 1887, *DDF*, 1ère sér., VI, docs 378, 397. Bismarck claimed the French army was stronger than Germany's: Herbert Bismarck to Reuß, 18 Dec. 1886, *GP*, VI, doc. 1236.

⁸⁴ Roy Bridge and Roger Bullen, *The Great Powers and the European States System 1815-1914* (2nd edn., Harlow, 2005), p. 242. In 1889 the Germany army's peacetime strength was 468,409; Austria-Hungary's 262,302; Italy's 235,069; Russia's 926,000, and France's 489,000. The War Ministry intended the 1893 law to be so large that France could not keep up – though the law proved less ambitious than envisaged, Förster, *Doppelte Militarismus*, pp. 28, 38. For Caprivi's justification of the measure to the Reichstag, Trench to Rosebery, 25 Nov. 1892, TNA FO/64/1275.

⁸⁵ Malet to Rosebery, 4 July 1893, TNA FO/64/1294; Malet to Rosebery 22 Oct. 1892 (including Wilhelm II speech), TNA FO/64/1275

⁸⁶ Allan Mitchell, 'The Freycinet Reforms and the French Army, 1888-1893', *Journal of Strategic Studies* 4, 1 (1988), pp. 19-28.

⁸⁷ Fuller, *Strategy and Power*, p. 336; Rothenberg, *Army of Francis Joseph*, p. 109. Austrian Emperor Franz Joseph believed Russia's western border garrison was being 'systematically and steadily increased', Paget to Salisbury, 15 January 1889, TNA FO/7/1146.

⁸⁸ Michael Schmid, *Der 'Eiserne Kanzler' und die Generäle: Deutsche Rüstungspolitik in der Ära Bismarck (1871-1890)* (Paderborn, 2003), ch. 9. I am indebted to Thomas Otte for this reference. For a

over whether the army should be expanded to meet foreign challenges even if this weakened its internal reliability. Moreover, Moltke publicly doubted by 1890 whether short, sharp victories over major Powers were still possible.⁸⁹ French fortress building seemed to rule out another quick invasion of France, and the General Staff increasingly doubted whether rapid success was possible against Russia. After 1890 the solution devised by Alfred von Schlieffen as CGS would be to outflank the French fortresses by attacking the less formidable Belgian ones, but that concept was incorporated into the concentration schedules only after 1905.⁹⁰ In the absence of a viable offensive strategy, the purpose of Bismarck's and Caprivi's rearmament became to reinforce deterrence.

On the other side, France and Russia were relatively easy to deter. It is true that their general staffs saw the Caprivi Law as strengthening Germany's offensive power, and as a consequence the Russians agreed not only to an alliance with France but also to a military convention.⁹¹ But the Boulangist movement collapsed in 1889 and in the following decade the growth of French military spending decelerated.⁹² Both the financial and the demographic effort entailed (given France's much lower birth rate than Germany's) had reached the maximum that was politically feasible, and the 1889 Freycinet Law like the 1893 Caprivi one would take many years to maximize the pool of trained manpower.⁹³ In contrast, Russia's spending continued to grow, and an economic boom during the 1890s expanded the funding available for tsarist rearmament. Much of this extra increase, however, was directed towards Asia rather than Europe. After 1887 there were no more major Balkan crises for two decades, and in 1897 Russia and Austria-Hungary reached an agreement to place the Near East 'on ice': in other words to respect the status quo.⁹⁴ The Franco-Russian alliance should not be seen as changing this picture, as its origins lay in France's and Russia's shared hostility to Britain as well as to Germany. Between 1884 and 1904 they were engaged in a building contest with the Royal Navy, to which the 'two-power standard' embodied in the 1889 Naval Defence Act and in subsequent construction programmes constituted London's response.⁹⁵ During the 1890s the most serious diplomatic crises occurred not in the Rhineland or the Balkans but outside Europe, where Britain clashed with France, Germany, and Russia in Africa and East Asia. By 1897-98 Germany's land situation was so favourable that Wilhelm II could embark on a major naval armaments effort against Britain while the German army's peacetime strength remained virtually static. In other words, the 1887-93 land armaments race ended in relative stability at a higher level of armaments, in part because both sides remained deterred, but also because the late 1880s diplomatic crises lacked longer-term repercussions, Caprivi commenting by 1890 that there was no imminent danger of

classic exposition of Bismarck's deterrence doctrine (and his belief that Germany's deterrent capability had been dwindling), see his 6 Feb. 1888 Reichstag speech, text in TNA FO/881/5601.

⁸⁹ Förster, "Facing People's War", pp. 220-25.

⁹⁰ Ehlert, et al, eds, *Der Schlieffenplan*, pp. 397, 411.

⁹¹ Fuller, *Strategy and Power*, pp. 353-60.

⁹² Crouzet, 'Recherches', p. 57.

⁹³ C. à Court, 'Progress in the French Army in 1893'; E. Agar, 'Progress &c. in the German Army to the End of 1893', both January 1894, TNA WO/33/54.

⁹⁴ Taylor, *Struggle for Mastery*, p. 370.

⁹⁵ The classic account is Arthur J. Marder, *The Anatomy of British Sea Power: a History of British Naval Policy in the Pre-Dreadnought Era, 1880-1905* (repr. London, 1964). See the reappraisal in Matthew S. Seligmann, 'Britain's Great Security Mirage: the Royal Navy and the Franco-Russian Naval Threat, 1898-1906', *Journal of Strategic Studies*, 35, 6 (2012), pp. 861-86.

war.⁹⁶ It was this stability that Russia's collapse after 1904, and the associated new run of diplomatic crises, would overturn.

-IV- Conclusion

This chapter has investigated three examples of land armaments races. In each case German military superiority was challenged by France or by France in association with others. All three races were partly technological, qualitative competitions, although that of 1866-70 most so and that of 1910-14 least: which gives mixed endorsement to Huntington's thesis that quantitative races are the most dangerous.⁹⁷ In all three cases public support for extended conscription was feeble, although it strengthened partly as a consequence of armaments expansion. However, domestic resistance seems to have constrained France more than Prussia in the 1860s, both sides about equally in the 1880s and 1890s, and the Central Powers more than their opponents in 1910-14. The role of lobbying by a 'military-industrial complex' seems to have been small, and less significant for land than for naval armaments.⁹⁸

These arms races must be seen in relationship to others, and terrestrial and maritime armaments competition viewed in conjunction. Until the 1860s France was engaged in naval rivalry with Britain, although in 1866 it belatedly switched its attention back to land armaments. In the 1880s and 1890s France and Russia again challenged the Royal Navy, thereby limiting their resources against the Central Powers. Conversely, after 1897, and especially after 1908, Germany prioritized its naval contest with Britain at the expense of its army (while Austria-Hungary after 1904 engaged in naval rivalry against Italy). Only with the *Rüstungswende* of 1911-12 did Germany re-emphasize land armaments, but now in circumstances where its alliance bloc's advantage was dwindling rapidly, and dwindling still more rapidly after the Balkan Wars.

Most weight has been given here to the action-reaction model as an explanatory framework, while underlining its inadequacies if divorced from its diplomatic and political context. Whereas both the 1866-70 and 1910-14 races developed suddenly, after the Austro-Prussian War and the Russian military reorganization (bearing out another Huntington insight - that the initial phases are the riskiest), that of 1897-93 reflected a more gradual intensification of established tensions. None the less, in Bismarck's words, 'War never explodes like a lightning bolt; it is always preceded by grave antagonisms...'⁹⁹ One conclusion from the analysis might seem that armaments competition is most destabilizing at the point of crossover or power transition when one side threatens to overhaul the other.¹⁰⁰ This finding should direct attention towards other impending crossover points, as when Britain and France closed in on Germany in the late 1930s, when the United States surged ahead of the Soviet Union in the early 1960s, and perhaps as the PRC narrows the gap with the United States

⁹⁶ Förster, *Doppelte Militarismus*, p. 38; Caprivi said the same to the Reichstag, presenting the bill as a precautionary measure to enable a defensive war on two fronts: Trench to Rosebery, 5 May 1893, TNA FO/64/1294.

⁹⁷ Huntington, 'Arms Races', p. 469.

⁹⁸ Marder, *Anatomy*, ch. 3.

⁹⁹ ('La guerre n'éclate jamais comme un coup de foudre; elle est toujours précédée de dissentiments graves...'), Herbetto to Flourens, 12 Mar. 1887, *DDF*, 1ère série, VI, doc. 479.

¹⁰⁰ For the starting point on 'power transition theory', Abramo Organski, *World Politics* (2nd edn., New York, 1968).

today.¹⁰¹ In all these instances we see not a stable equilibrium but an unstable one with one side moving up and the other moving down – or at least according to both sides' perceptions. Such conjunctures have not, however, invariably ended in hostilities: and although in both 1870 and 1914 the Germans acted to forestall a crossover, in the 1880s they were inhibited from doing so. Moreover, even in spring 1914 the Berlin leaders were still considering non-violent alternatives such as new rounds of railway or fortress construction (or intensified conscript call-ups) that might preserve their military advantage. They were not compelled to react so forcefully after the Sarajevo assassinations, any more than the French were compelled to after the Ems Despatch. In considering why wars break out, therefore, arms races must always be placed within their political context. They have a vital – and unjustly neglected – part to play in explaining fateful events, but they provide far from the whole story.

¹⁰¹ Cf. the tables in Richard Overy and Andrew Wheatcroft, *The Road to War* (London, revised edn, 1999, p. 369 (for 1939); Richard Neustadt and Ernest May, *Thinking in Time: the Uses of History for Decision Makers* (New York, 1988), pp. 124-5 (for 1962); and 'The Dragon's New Teeth', *The Economist*, 7 April 2012 (for China/US).