

# The Politics of the Map in the Early Twentieth Century

**Michael Heffernan**

**ABSTRACT:** Drawing on material from several countries, principally Britain, France, and the United States, this paper considers the politics of mapmaking in the years before, during, and immediately after World War I. Following a discussion of some noteworthy but hitherto overlooked mapping projects from the period around 1900, the paper examines the wartime production of maps as aids to geopolitical strategy in three Allied cities—London, Paris, and New York—with particular reference to the major geographical societies in these locations.

**KEYWORDS:** Geopolitical maps, international relations, early twentieth century, World War I

## Introduction

**T**his essay is about the politics of the map in the opening years of the twentieth century. It does not pretend to provide a comprehensive review of mapmaking in this period but considers instead the map as a geopolitical artefact; as an image of political space, both actual and potential; and as a military and strategic device that both reflected and challenged the objectives of the major nation-states at a symbolically significant historical juncture widely perceived as marking the end of a long era of European expansion. The paper is primarily concerned with the political uses (and abuses) of the map and consequently has little to say about the technical developments in mapping and survey in this period. Nor does it review the existing research on the history of military mapping before and during World War I (for example, Chasseaud 1991; 1998). I intend to re-examine, in this early twentieth-century context, the themes considered by other scholars who have discussed the politics of cartography in other periods, including those researchers responsible for the impressive body of literature on geopolitical mapping before and during World War II (see, for example, Atkinson 1995; Balchin 1987; Godlewska 1999; Harris 1997; Herb 1997; Korinman 1990; Kost 1988; Murphy 1997). Following an opening exploration of the relationship between maps and politics at the dawn of the twentieth century, the essay focuses on some hitherto unexamined map-making agencies established during World War I in

the major cities of three Allied countries: Britain, France, and the United States.

## The Cartography of the Year 1900: Mapping the Twentieth Century

The rapidly expanding literature on the history of cartography from the sixteenth to the nineteenth centuries has demonstrated the importance of the map in the creation and maintenance of nationalism and imperialism, the core ideologies that propelled the European peoples to colonize the non-European world (see, for recent examples, Black 1997; Brotton 1997; Buisseret 1992; Edney 1997; Harley 2001; Jacob 1992; Jardine 1996; Kain and Baigent 1992; Konvitz 1987). For some commentators, the passing of the nineteenth century seemed destined to mark the end of this long era of European empire building. The unexplored and unclaimed “blank” spaces on the world map were rapidly diminishing, or so it seemed, and the sense of “global closure” prompted an anxious fin-de-siècle debate about the future of the great empires whose potential for further development now seemed strictly limited. While the illusion of plentiful “empty” space beyond Europe had persisted, the rival expansionist powers within Europe had retained their characteristic imperial confidence and arrogance. The “closure” of the global imperial system implied not only the eclipse of the imperial age but also the beginning of a new era of intensifying inter-imperial struggle along borders that now straddled the globe (Kearns 1984; 1993).

Through the 1890s and 1900s, worrying prophecies of global “closure” came thick and fast. In the United States, historian Frederick Jackson Turner

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delivered a famous lecture about the consequences of the “closure” of American frontier settlement in the west during the Chicago Exposition of 1893, a spectacular event designed to commemorate the quatercentenary of the Columbian encounter (Turner 1998; Bogue 1998). The creation of a “transcontinental America” (Meinig 1999) was hugely gratifying, claimed Turner, but this presupposed the need for a new national project that could shape and inspire American identity in the future, just as the process of westward expansion had done in the past. If it was to consolidate its new-found power, the United States might need to seek out new frontiers beyond the American homeland.

Just over a decade later, the British geographer and Conservative politician Halford Mackinder developed a similar theme in a widely debated 1904 lecture to the Royal Geographical Society. Mackinder foresaw the ending of what he called “the Columbian age” of European maritime expansion. This would be accompanied by an eclipse of the old sea-faring imperial nations and the emergence instead of huge land-based empires, bound together by railways, the most important of which would arise in the heart of the Eurasian landmass. This region was, Mackinder argued, “the geographical pivot of history” (Mackinder 1904; see also Blouet 1987; Heffernan 1998, pp. 63-71; Ó Tuathail 1996, pp. 75-110). For Mackinder, these changes were deeply troubling. In his view, Britain’s future prosperity depended on recognizing and responding quickly to this emerging geographical “reality” (Mackinder 1919).

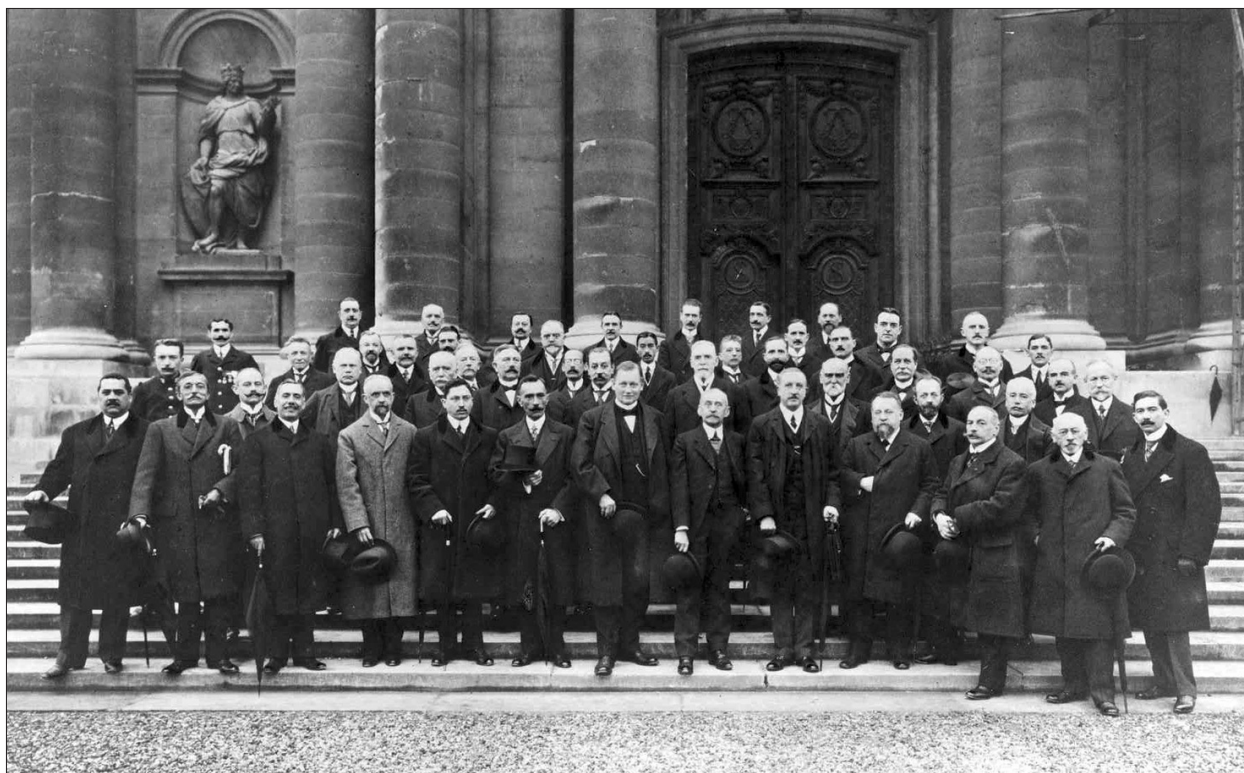
These anxious visions of a twentieth-century future were by no means idle speculations. They reflected, and were informed by, real economic and geopolitical changes. Between around 1890 and the outbreak of World War I, the world system underwent a profound transformation as the energy base of industrial capitalism shifted from coal and steam to oil, gas, and electricity. The economies in the vanguard of this transition—the United States and Germany—were poised to dominate the world economy but whereas the former had already established itself as a continental-scale state, the latter remained hemmed in by relatively declining powers and by the old, nineteenth-century system of European alliances. Germany’s pitch for European hegemony, the principal cause of World War I, can be viewed as an attempt to break free of these constraints and acquire American levels of geopolitical and economic resources.

The rapid rise of Germany, and its bid for European supremacy after 1890, generated a surge of competitive nationalism, a kind of “geopolitical panic” that transformed and destabilized the European and

global orders. This was characterized by an intensifying economic nationalism that steadily undermined the liberal, nineteenth-century ideals of free trade; by a re-invigorated and often expensive clamor for the last remaining colonial territories; and by a fundamental re-ordering of the European system of alliances that was to lock first Russia and then Britain into an increasingly unstable arrangement designed to encircle and limit German expansionism. This final development produced a dangerous bipolar system of European alliances in which a triple entente of Britain, France, and Russia surrounded a central European triple alliance of Germany, Austria-Hungary, and Italy. The system was made all the more unstable by a massive expansion in military expenditure. Between 1880 and 1914, the size of the major European armies rose by an average of 73 percent and the European warship tonnage increased by a factor of four (Kennedy 1988, pp. 249-354).

Military re-organization was associated with a substantial expansion in official intelligence gathering. This in turn inspired an increase in the volume of official map production through existing and newly created cartographic agencies (see, on the British experience, Stoddart 1992). These organizations, including the Geographical Section of the General Staff (GSGS) in the British War Office and the Service Géographique de l’Armée (SGA) in the French Ministère de la Guerre, operated alongside the older civilian and commercial mapmaking organizations and produced a mass of new cartographic material, much of it unseen by the public at large. The volume and nature of this production still awaits detailed historical analysis, as do the agencies themselves, and it is beyond the scope of this essay to attempt such a review (see, however, Lévy 1926; Ministère de la Défense Nationale et de la Guerre 1938; Service Géographique de l’Armée 1936, on the French organizations). Suffice it to say that rising international tension in the years before World War I generated a range of new official cartography in each major nation-state, alongside the ever increasing volume of commercially available material.

This fact carried obvious implications both for cartographers and for those who sought to influence the political conditions within and between rival nation-states at the dawn of the twentieth century. The map, it would seem, not only reflected geopolitical circumstances; if carefully and intelligently created, the map might also help to shape these conditions. Two contrasting but equally ill-fated maps from the period around 1900 serve to illustrate these remarks: first, by demonstrating how maps were imagined as both products and potential harbingers of geopolitical change; and second, by revealing how a map’s



**Figure 1.** The delegates at the Second International Conference on the International World Map, Paris 1913 (Albrecht Penck is the tall figure in the center of the front row). [Source: Royal Geographical Society Archives, London.]

reception and impact reflected changing political conditions.

## Geopolitical Ideals and Utopian Cartography: The International Map of the World

Our first example concerns the remarkable, if ultimately doomed, attempt to produce an international map of the world at the 1:1 million scale. This project was first mooted in 1891 by the leading German geographer Albrecht Penck, then at the University of Vienna. At the Fifth International Geographical Congress in Berne, Penck argued that a new world map should be developed jointly by the mapmaking agencies of the major powers (Penck 1892; 1893). The IMW (as it was subsequently termed) should be constructed at the million scale, he suggested, based on common conventions and symbols and with place names expressed in the official languages spoken by the populations represented on each sheet. Developing the same “global closure” theme that Mackinder would later develop, Penck insisted that the end of the nineteenth century marked the perfect time to begin such an ambitious, collaborative project. The exploration of the world’s land

masses was virtually complete, he claimed, and only the secrets of the polar regions, the highest mountain ranges, and the more forbidding continental interiors remained to be uncovered. The opening up of the non-European world in the centuries since Columbus had been carried out by geographers working for competing nation-states, but the challenge in the new century would be to draw this information together for the good of all humanity. What better way to start than with a new international map of the world—a fitting summation of, and tribute to, the preceding four centuries of selfless, heroic, and often deadly scientific exploration? Such a map could—and should—be used in every country of the world, argued Penck. Based on this solid cartographic foundation, a new, twentieth-century geography could emerge to ask new and more complex questions about the natural world and its human inhabitants. The explicit objective was to challenge the assumption that cartography was an inherently national or imperial activity undertaken by, and for, specific nation-states to facilitate and affirm territorial ambitions.

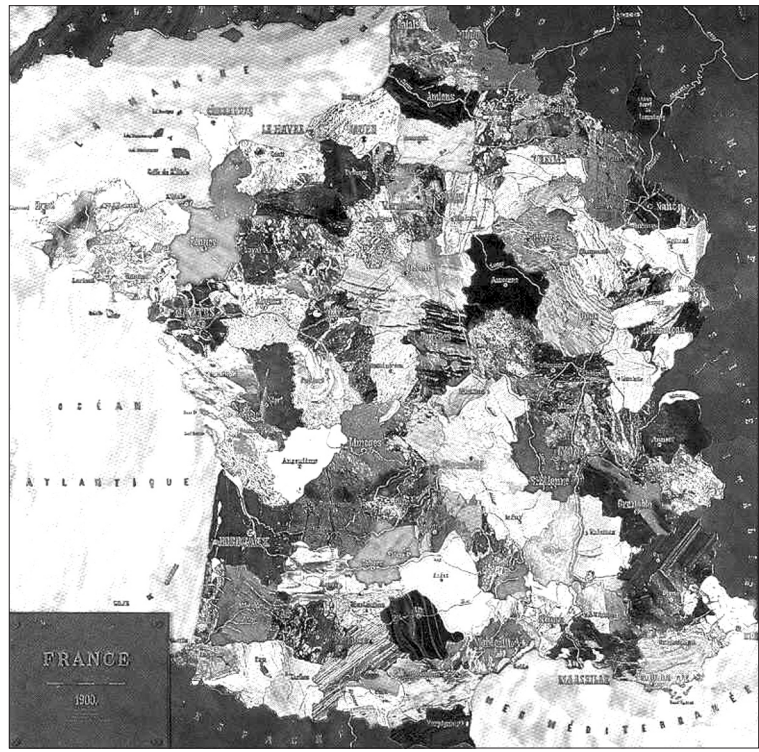
The Berne Congress agreed that an investigative commission should be established, but little was achieved, despite further supportive resolutions at the International Geographical Congresses in London in 1895, in Berlin in 1899, in the United



States in 1904, and in Geneva in 1908 (see the resolutions by Penck, Franz Schrader, E.H. Hills, and others in International Geographical Congress 1896, pp. 365-70, 781-82; International Geographical Congress 1901, vol. 1, pp. 208-29; vol. 2, pp. 65-71; International Geographical Congress 1905, pp. 95-102, 104-7, 553-70; International Geographical Congress 1909-11, vol. 1, pp. 331-35, 388-400; vol. 2, pp. 52-53; see also Robic 1996). An inaugural conference was finally organized to establish a properly constituted International Map Committee at the British Foreign Office in London in November 1909, and the committee produced an outline initial agreement. Preliminary work on a selection of new European 1:1 million sheets began, using existing national maps at varying scales. A mere six provisional sheets had been compiled by 1913, including a number constructed by British cartographers from the Ordnance Survey working under the supervision of then Director-General, Charles Close.<sup>1</sup>

Unfortunately, several of these sheets were rejected by different national agencies as inaccurate, and following another high-sounding resolution at the Tenth International Geographical Congress in Rome in 1913, a second conference was organized in Paris later that year by Général Bourgeois, chief of the Service Géographique de l'Armée, in an attempt to accelerate the work (see commentaries by Penck and others in International Geographical Congress 1915, vol. 1, pp. 5-65, 111-15). The Paris conference was attended by over 80 delegates—politicians, diplomats, civil servants, as well as cartographers and geographers—from 34 countries (Figure 1). Unfortunately, their deliberations were undermined by the decision of the United States to withdraw from the project in order to develop its own, national scheme (overseen by the American Geographical Society) to develop a 1:1 million map of Hispanic America unfettered by international agreements.<sup>2</sup>

The outbreak of war in 1914 effectively destroyed the International Map as originally proposed, its fate sealed by the national rivalries that it had been initiated to overcome. The bitterness created by the war led even Penck, the scheme's indefatigable original



**Figure 2.** A Russian map of France, presented to the French Government during the Exposition Universelle Internationale, 1900. [Source: Musée du Château de Compiègne, Compiègne (photograph by R.M.N. Arnaudet).]

champion, to abandon his pre-war internationalism in favor of a much more conservative preoccupation after 1918 with the injustices of the Versailles Treaty and its pernicious impact on Germany (see, for example, Penck 1915; 1916, and more generally Mehmel 1995). But 1918 did not mark the definitive end of the 1:1 million international map, for the project continued, in an attenuated form, under British direction in the Ordnance Survey through the inter-war years before being revived again after World War II under the auspices of the United Nations (MacLeod 1926; United Nations 1953; Gardiner 1961; Crone 1962; Winchester 1995).

## Geopolitical Realities and Symbolic Cartography: A Tsarist Map of France

If the fate of the 1:1 million map reveals the limits of internationalism in the years before 1914, our second example reflects the enduring power of the more traditional forms of nationalist power politics that would ultimately lead to the outbreak

<sup>1</sup> Archives of the Royal Geographical Society, London—1:1 Million Map: Miscellaneous Correspondence, 1913-14.

<sup>2</sup> The resulting American map, which was finished in 1946, was described by Lord Rennell of Rodd, the President of the Royal Geographical Society at the time, as "the greatest map ever produced of any one area." Quoted in Bowman (1948, p. 143); see also Anon. (1946), Wright (1952, pp. 300-319).

of war. The second map, now virtually forgotten, is an extraordinary artefact, as exquisitely beautiful as it was geopolitically portentous. It was produced, by order of Tsar Nicholas II, in the imperial Russian Gemstones (Russkiye Samotsveti) factory in Ekaterinburg, in the Urals, at the very end of the nineteenth century. It takes the form of a one-meter square map of France, placed within a magnificent carved wooden encasement, three meters high and half a meter deep (Figure 2). On this sumptuous map, the ocean, the seas, and each French département are carved from highly polished marbles, granites, and semi-precious stones, all hewn from mines in the Urals. Some 106 towns and cities are identified with gold lettering and marked by different precious and semi-precious gemstones, also mined in the same region. The major rivers are fashioned from sinuous curves of platinum (750 cm in total) that snake their way expensively across the map's surface.<sup>3</sup>

This amazing object was prepared—based on cartographic information sent to Ekaterinburg by the Service Géographique de l'Armée via diplomatic channels in the Russian Embassy in Paris and the Russian Foreign Ministry in St. Petersburg—by several workers operating under the supervision of V. V. Mostovenko, the imperial factory's master craftsman. The map took over two years to produce and was transported to Paris early in 1900 where it was formally presented to the President of the French Republic, Émile Loubet, by the Russian Ambassador to France, Prince P. L. Ourousoff, to mark the opening of the Exposition Universelle Internationale in April of that year.<sup>4</sup>

The 1900 Exposition was the most ambitious European event of its kind and was consciously designed to welcome the new century on an even more lavish scale than Chicago had celebrated the Columbian encounter seven years earlier (see Picard 1902-1903 and, more recently, Kaiser 1999; Silverman 1989; *Mouvement Social* 1992; and more

generally, Greenhalgh 1988; Rydell 1984). The Russian map must have seemed an ideal presentation to mark the opening of the Exposition. An expensively crafted gift fashioned in eastern Europe and presented for display in western Europe, the map perfectly suited both the Exposition's theme of international cooperation and its spectacularly opulent style. An entire *quartier* in west-central Paris, between the Champs Élysées and the river Seine, had been completely re-built for the occasion: on the right bank loomed an immense triple archway, the entrance to the main site, wherein dozens of huge, ornately decorated halls had been erected to house exhibits from around the world, grouped into eighteen major classes from agricultural machinery to military hardware. Beyond was the Grand Palais, with its domed roof of steel and glass flanked by bronze chariots originally located in the gardens at Versailles, with the scarcely less magnificent Petit Palais opposite. On the left bank, in the shadow of the Eiffel Tower, itself only a decade old, were further exhibition halls on either side of the Champ de Mars, as well as a major new thoroughfare along the river—the Rue des Nations—on which each of the major powers had erected their national pavilions. Here one found a replica of Capitol Hill, a German Schloß (complete with beer garden), an Elizabethan manor house, and a reconstruction of the Kremlin. Adjacent to the Eiffel Tower was an enormous globe, designed by the radical geographer Elisée Reclus and intended deliberately to underscore the “one-world” message, on which was displayed signs of the zodiac and around which visitors could glide in chairs suspended from a spiral encasement (Dunbar 1974). Linking the right and left banks of the Seine was the glittering span of the Pont Alexandre III, a spectacular neo-Baroque bridge named in honor of the late Tsar, father of Nicholas, who had laid the foundation stone on his hugely successful visit to Paris four years earlier (for a contemporary report, see Daragon and Dolis 1896). The Russian map

<sup>3</sup> Precise information about the map is difficult to obtain. The curators in Compiègne have no detailed information on the components used in its construction, but archival and other material (cited below) gives some, as yet unverifiable, information on the stones used. The exact circumstances in which the map was produced are also unclear. The imperial factory in Ekaterinburg was founded in 1726, one of several established in the newly created garrison outpost during the latter years of Peter the Great's reign as part of the Russian drive to exploit the enormous mineral wealth of the Urals. The factory specialized in the production of expensive products for the Russian aristocracy and upper middle classes prior to the Revolution of 1917, and, unlike other workshops that had specialized in luxury products (such as the Fabergé plant in St. Petersburg), the Ekaterinburg plant continued under the Bolsheviks and survived the destruction of World War II mainly because of its isolated eastern location. It has continued to produce a variety of award-winning jewellery and objets d'art since 1945. The official pre- and post-revolutionary story of the factory is available, in Russian, on two websites: <http://heritage.eunnet.net/lithica/ural/1982/text.htm> and [http://sch161.eimc.ru/KAMNI/mnu\\_3\\_2.htm](http://sch161.eimc.ru/KAMNI/mnu_3_2.htm). The former site contains a brief description of the map at [http://heritage.eunnet.net/lithica/heritage/litos/05/litos5\\_2/htm](http://heritage.eunnet.net/lithica/heritage/litos/05/litos5_2/htm). I am grateful to Dominique Moran for her assistance with translating these documents.

<sup>4</sup> The Ekaterinburg factory's jewellery had received rave reviews at the 1897 Stockholm Exhibition, and this success seems to have prompted the Tsar to commission the map for the 1900 Exposition in Paris. See <http://www.nv.ru/news/37.htm> (in Russian).

of France was exhibited for the duration of the Exposition, not in the Russian pavilion on the Rue des Nations, but in one of the great exhibition halls on the Esplanade des Invalides devoted to “Industries Divers,” where it drew many admiring reports (e.g., Raffalovitch n.d.; on the Russian exhibits in general, see Commission Impériale de Russie à l’Exposition Universelle 1900).

The Paris 1900 Exposition was enormously popular. According to the official report over 50 million people visited the main site and the outlying parks between April and November (Picard 1903, vol. 8, p. 182). But, as the more critical observers noted, its hopeful message of international cooperation was frequently undermined by displays that seemed tawdry, over-commercialized, and meretricious (Greenhalgh 1988). Entrenched national rivalries were never far from the surface, despite the stirring international rhetoric. Many exhibits—even those specifically designed to celebrate the spirit of international harmony—betrayed more than a hint of national chauvinism and self-interest. The Russian map was a case in point. Though presented as a “simple [sic] tribute from the people of Russia to the people of France” (Raffalovitch n.d., p. 6) on the occasion of Parisian centennial celebrations, the map was in fact designed to re-affirm the Franco-Russian alliance and the end of the Bismarckian balance of power in Europe.

The “fateful alliance” between liberal, republican France and imperial, autocratic Russia was an extremely unlikely union, to be sure, and the regular high-level meetings deemed necessary to sustain this rapprochement involved several absurdities, including the incongruous sight of Russian imperial troops playing a spirited version of the Marseillaise, the hymn to French republicanism, as the Tsar stood rigidly to attention. Such problems of protocol were deemed to be worth it, however, for the real objective was to establish an encircling alliance against German expansionism, the arrangement into which Britain was drawn following the signing of the Entente Cordiale in 1904 (Andrew 1968; Kennan 1984; Sinitsyn 1998). The details of the map reflect these larger, anti-German geopolitical objectives. Although the eastern provinces of

Alsace and Lorraine, ceded by a defeated France to the new German Empire in 1871 following the Franco-Prussian war, are not included within the lavishly colored montage of French national space, the map followed French cartographic custom at the time by depicting the former, 1870 border as a single line enclosing the disputed territories within what was otherwise unidentified and undifferentiated German space, a subtle but deliberate affirmation of French *revanchism*.

The subsequent history of the 1900 Russian map provides further confirmation of the complex cultural politics that shaped its production and reception. Immediately after the Exposition, the map was placed on permanent display in the Louvre, in accordance with a promise Loubet made in his letter of thanks to the Tsar on April 9, 1900.<sup>5</sup> There the map remained until World War I when, following the Bolshevik Revolution in 1917, it was discretely (and mysteriously) withdrawn from public view. Following the revelation in 1926 that the Tsar had been murdered by the Bolsheviks in Ekaterinburg—the very city in which the map had been produced (a fact prominently displayed on the brass plate that was firmly set into the map’s wooden encasement)—the authorities in the Louvre, on the advice of the Ministère des Affaires Étrangères, decided that the object was too controversial to remain in public view.<sup>6</sup> This decision was motivated, in part, by a desire to protect the map from harm, but it also reflected the growing *détente* between France and Germany before the latter was invited to join the League of Nations in 1926. Displaying in the heart of Paris a symbol of the ill-fated pre-1914 alliance between republican France and imperial Russia was deemed to be less than entirely conducive to the first, uncertain stirrings of Franco-German cooperation. The fact that this map also depicted France within its diminished pre-1918 borders was, to be sure, a further reason for its withdrawal from public view.

But the decision to mothball the map in the Louvre raised other problems. The museum authorities received several letters through the 1920s and early 1930s from inquisitive spectators who recalled its original display, asking about its whereabouts. One correspondent wondered whether a cash-strapped

<sup>5</sup> The letter is available in Loubet’s private papers, mostly arranged by year, in the Archives Nationales [AN] 473 AP 7. The correspondence about the map’s transfer to the Louvre can be found in Archives du Louvre [AL]/M8 (Objets d’Art: Dons et legs acceptés, 1793-1956. Carte de France (1901)).

<sup>6</sup> It should be noted that the first authoritative statement about the circumstances of the Tsar’s murder by a Russian witness was published in Paris (Sokolov 1926). The correspondence relating to the withdrawal of the map can be found in AN F<sup>21</sup> 2277, 4061, 4347, 4490 and in AL/U10 (Château de Compiègne: Dons par l’État), notably the explanatory letter from H. Verne (Directeur des Musées Nationaux et de l’École du Louvre) to G. Huisman (Directeur Général des Beaux Arts), dated May 20, 1939.



government had secretly sold the object to raise funds.<sup>7</sup> In 1930, following an intriguing exchange between the museum directorate and the government, it was decided that the map should be quietly re-located to the small museum in the Château de Compiègne, the palace to the north-east of Paris where Tsar Nicholas had stayed during his brief visit to France in the autumn of 1901. Here it could be safely “displayed” away from suspicious metropolitan eyes, and here it remains to this day, in a small, rather dusty, and otherwise empty room.<sup>8</sup>

The international 1:1 million map and the 1900 Russian map of France were both casualties of the troubled era in which they were conceived, though their poignant fates stem from different causes. As an avowedly internationalist—even utopian—project, the international map foundered on the rocks of entrenched national antipathy and suspicion, the forces that were subsequently to drive the European powers to war in 1914. The fact that this scheme was not revived on its original terms after World War I demonstrates that the internationalism it represented had not been strengthened—indeed it was probably weakened—by the terrible events of 1914-1918. The 1900 Russian map of France was a symbol of these same pre-war national rivalries and intrigues, but it was condemned to languish in a small provincial museum as a result of geopolitical upheavals that flowed directly from the war.

The remaining sections of this essay take us forward into the period of World War I to consider how other maps were produced, stored, recycled, and distributed by hitherto unexamined cartographic units in three major Allied cities: London, Paris, and New York.

## Maps, War, and Empire: The View from London

On the eve of World War I the largest, privately held map collection in London was maintained by the Royal Geographical Society (RGS) which, with over 5,300 Fellows, was by far the largest, wealthi-

est, and most successful such society in the world (Heffernan 1996). The ruling Council of the Royal Geographical Society was a roll-call of Britain's imperial establishment. Thanks largely to the energetic patronage of Lord Curzon, former Vice-Roy of India and subsequently Foreign Secretary, the Royal Geographical Society had recently acquired the palatial buildings in Kensington Gore that remain its headquarters to this day. This newly refurbished mansion gave the Society a prime location at the very heart of “scientific London,” that overlapping network of Victorian museums, research institutes, and learned societies that dominated the landscape of Kensington. The short walk to the Royal Geographical Society from the South Kensington underground railway station took the visitor, then as now, past the imposing Natural History Museum, the Science Museum, the Victoria and Albert Museum, Imperial College, plus several major Embassies. This area, more than anywhere else in London, encapsulated the idea of the “imperial archive,” the “calculating center” of the British imperial state where so many of the nation's self-consciously imperial scientific institutions were located (on these concepts, see Latour 1987, pp. 215-57; Richards 1993). If the “heart” of the British Empire was to be found further east in the echoing corridors of Whitehall or in the financial institutions of the City of London, the “brain” of empire was located here, in Kensington.

On July 31, 1914, two days before news reached London of the German invasion of Belgium and France and four days before Britain declared war, Curzon's successor as President of the Royal Geographical Society, Douglas Freshfield, placed the personnel and resources of the Society, including its impressive map collection, at the disposal of the British War Office, in accordance with policy agreed a decade earlier in 1904. From that day until the end of the war, the Royal Geographical Society became a significant institutional focus of British military intelligence. The existing directors, led by successive Secretaries, Sir John Scott Keltie and Arthur Hinks, and by Freshfield's wartime successor as President,

<sup>7</sup> AL/U10 (Chateau de Compiègne: Dons par l'État—Letter from Eugène Dubois (President of the Société Historique du Raincy) to Albert Lebrun (President of the French Republic), February 16, 1939. The fact that this letter was sent, by someone who clearly had a personal interest in the map, some nine years after it had been removed from the Louvre, suggests that its re-location to Compiègne took place with the minimum of publicity. Other letters inquiring about the map can also be consulted in this same dossier.

<sup>8</sup> The room in which the Russian map is positioned is not always open to the public, but the museum had staged an exhibition to commemorate the visit of Tsar Nicholas to Compiègne in the autumn of 1901, and although the map had no direct connection with this event, it was incorporated into the exhibition in a rather low-key way. Visitors were ushered through the small, ground-floor room in which the map is located en route to the main exhibition rooms on the first floor, where an expensively assembled display of objects from French and Russian collections relating to the Tsar's visit and the Franco-Russian alliance, complete with detailed commentaries, could be viewed. The map is described briefly in the exhibition catalogue—see Musée National du Château de Compiègne (2001, pp. 20, 124). I am grateful to the curators at Compiègne, particularly Jacques Perot, Jacques Kuhnmunche, and Elisabeth Caude, for their assistance.

# THE POLITICAL MAP OF AFRICA IN JULY 1914



**Figure 3.** The political geography of Africa on the eve of the war, after Harry Johnston. [Source: Johnston, H.H. (1915), Political geography of Africa before and after the War. *Geographical Journal* 45: 273-301 (fold-out series of three maps positioned at end of this number of the journal).]

Sir Thomas Holdich, were supplemented by dozens of mainly female secretarial and cartographic staff and by a shadowy group of intelligence officers associated with both the Geographical Section of the General Staff (GSGS) of the War Office and the Naval Intelligence Department (NID) of the Admiralty (Anon. 1919).<sup>9</sup>

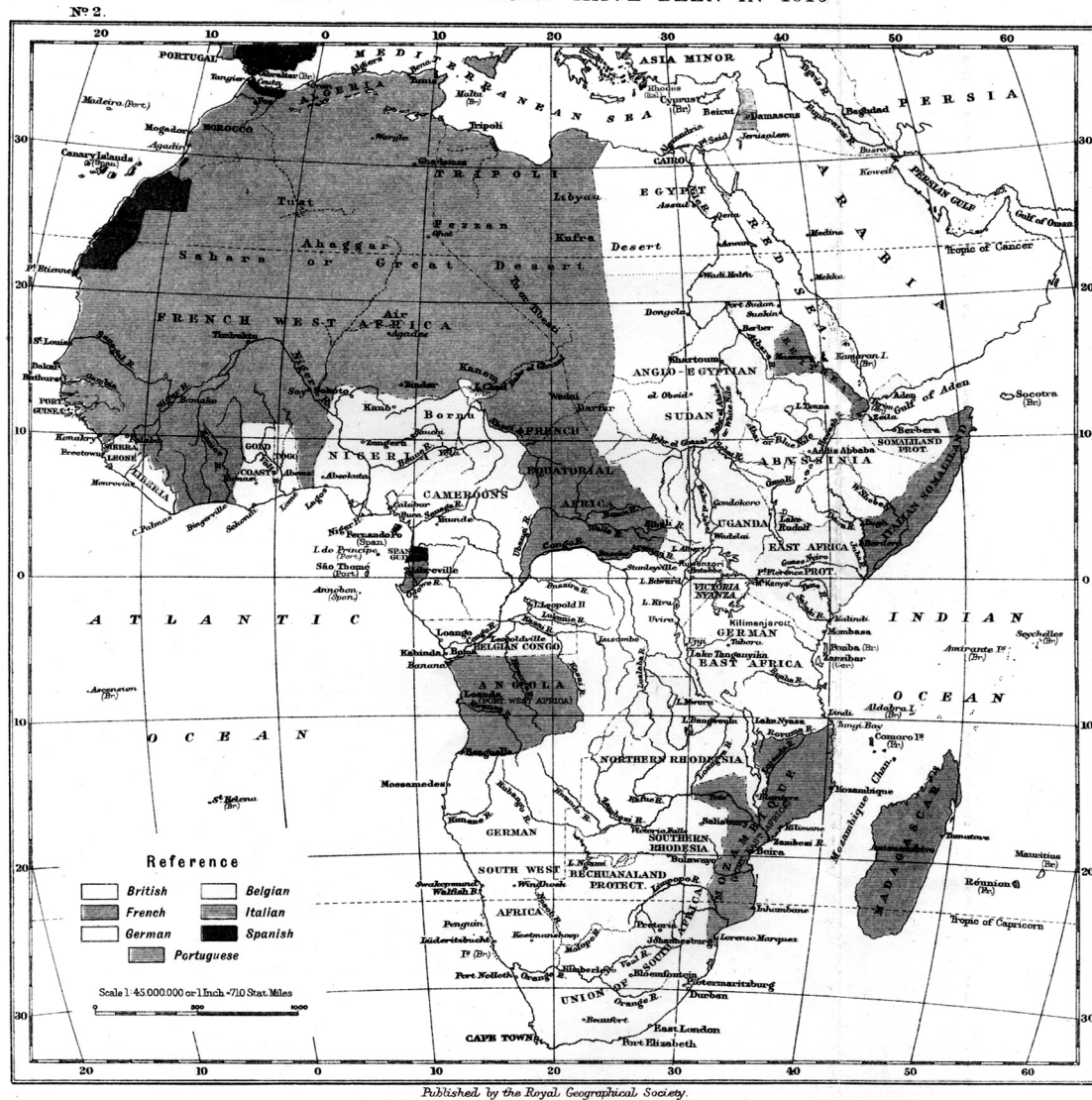
The Geographical Section of the General Staff was the oldest bureau in the expanding network of institutions that made up the British intelligence community (Andrew 1985, p. 259). It was headed by Colonel (later Sir) Walter Coote Hedley, whose full-time

staff of twenty-four officers was responsible for the production and collation of specialist (and generally secret) maps for official and military use. In view of its mapmaking role, the Geographical Section of the General Staff had close relations with the Ordnance Survey (OS), the Director of which, Charles (later Sir Charles) Close, had been its former chief. Indeed, the Geographical Section of the General Staff and the Ordnance Survey effectively fused into a single operation between 1914 and 1919 and oversaw the production of the estimated 32 million map sheets for the British "war machine" issued during that

<sup>9</sup> This section is based on the unpublished correspondence of leading RGS Fellows, particularly Douglas Freshfield, John Scott Keltie, Arthur Hinks, and Thomas H. Holdich, available in files arranged by Fellow's name and year, in the RGS archives in London. It also draws on the 1:1 million map correspondence, arranged by year in the same archive. The arguments are put forward in greater detail in Heffernan (1996).



# AFRICA AS IT MIGHT HAVE BEEN IN 1916



**Figure 4.** The predicted political geography of Africa in 1916 had Germany and its allies been victorious in 1914, after Harry Johnston. [Source: Johnston, H.H. 1915. Political geography of Africa before and after the War. *Geographical Journal* 45: 273-301 (fold-out series of three maps positioned at end of this number of the journal).]

period (some 21,000 per day), mostly in the form of large-scale trench maps (Chasseaud 1991; 1998). The other intelligence agency that also acquired offices in the Royal Geographical Society was the Naval Intelligence Department, headed by the charismatic Admiral (later Sir) William “Blinker” Hall.

Lectures by invited academics and dignitaries continued in the Royal Geographical Society throughout the war, and most were published in the *Geographical Journal*. Several lecturers, perhaps the majority, concerned themselves with various aspects of the war, and a few were openly critical of Britain’s political and military leadership, not least for failing to take seriously the country’s store of geographical expertise, a theme that became especially prevalent after the disaster of the 1915 campaign at Gallipoli (Royal Geographical Society 1917; Hogarth 1915). Some

of these lectures made use of various “shock” maps, which were often recycled and sometimes ended up in the national and international press. An intriguing example was the trio of maps produced by Sir Harry Johnston, the zoologist, explorer, and African colonial administrator, to accompany his widely debated lecture of February 24, 1915. The three maps show the political geography of Africa as it was on the eve of the war, in July 1914 (Figure 3); the arrangement Johnston predicted if Germany and her allies were to win the war and impose their colonial demands on the defeated Allies (Figure 4); and, finally, the arrangement Johnston recommended if—or rather when—the Allies won the war (Figure 5).

The evidence on which Johnston’s maps were based was not made clear in the accompanying text, but the message they conveyed was clear: German ter-



**Figure 5.** The predicted political geography of Africa in 1916 in the event of an Allied victory, after Harry Johnston. [Source: Johnston, H.H. 1915. Political geography of Africa before and after the War. *Geographical Journal* 45: 273-301 (fold-out series of three maps positioned at end of this number of the journal).]

ritorial ambitions were global rather than merely European and, as such, directly compromised Britain's imperial interests in Africa (and elsewhere). These images, and hundreds like them about other parts of the world, are likely to have had a considerable impact on popular attitudes during the war. Maps of this kind seem to have circulated widely: the *Toronto Globe* described Johnston's maps on May 5, 1915 (p. 2, col. a) as "the most important unofficial documents that have crossed the Atlantic since the beginning of the war."

The accuracy of Johnston's images was, of course, highly debatable. It is most unlikely that his second map, showing the dread prospect of a post-war Africa with a great swath of German territory stretching uninterrupted from east to west across the conti-

nent's central tropical zone, reflected agreed policy in Berlin. Germany's territorial demands in Africa, though occasionally invoked in wartime propaganda, were regarded as relatively unimportant—a second-order problem, easily resolved once the war was won. The famous war aims memorandum drawn up by Chancellor Theobald Bethmann Hollweg in September 1914 certainly contained a reference to a central African empire comprising the existing German colonies plus territorial concessions from the Allied powers, but this was not a detailed claim, and it appears this part of the document—drafted by Colonial Minister Wilhelm Solf under the erroneous assumption that there were to be no German territorial claims in Europe—was added as an afterthought (Fischer 1967, pp.102-104, 586-591).



However ill-informed Johnston was about German ambitions (and a cautious concern for the truth on that question was probably the last of his concerns), he does appear to have been extremely well briefed about Allied policy, including its more secret aspects. A comparison of Johnston's second and third maps is instructive in this respect. These two images are dramatically different in virtually all respects: the former shows a cohesive, east-west German African empire, while on the latter, German influence is eradicated, and the long-cherished dream of a British African empire stretching from the Cape to Cairo appears instead (notwithstanding the strategic absence of British pink from Egypt). But the most intriguing aspect of the second and third maps is the enhanced Italian presence in North Africa, which appears on both. At the time Johnston delivered his lecture, Italy—still part of the pre-war Triple Alliance with Germany and Austria-Hungary—was neutral. His second map predicts, not unreasonably, that even a neutral Italy would be in a sufficiently strong position to demand a slice of North African territory at the expense of both Britain and France, if the Central Powers were to win the war. Oddly, Johnston's third map suggests that this arrangement would also be the most likely outcome in the event of an Allied victory. This would seem to confirm that Johnston was well aware of the secret proposals being hatched in London and Paris at the time of his lecture to persuade the Italian government to enter the war on the Allied side, despite the pre-war alliance with Germany and Austria-Hungary, in return for colonial territorial concessions, principally in the Ottoman Empire but also in Africa (Hess 1963). These were the very proposals subsequently accepted by the Italian government at the Treaty of London, signed on April 26, 1915, as the condition for a declaration of war against the Central Powers. They were also, of course, the proposals largely ignored by the British and French governments, to the dismay of the Italian delegation, at the Peace Conferences in 1919.

As Johnston's African maps were being debated in various capitals, on both sides of the wartime divide, the cartographic work of the Royal Geographical Society continued apace. Following some acrimonious discussion, in which the Geographical Section of the General Staff and the Naval Intelligence Department revealed their very different agendas, it was agreed that the Royal Geographical Society should begin official map work to complement the mass production of maps undertaken by the Ordnance Survey. The Society was instructed to produce a new series of map sheets, covering Europe and the Middle East at the 1:1 million scale; in other words, to continue the

work that had begun so hesitantly in the Ordnance Survey on the international 1:1 million map before the war. If the Royal Geographical Society could complete the European and Middle Eastern sections of the "international map" based on British rather than international symbols and conventions, this would have significant propaganda value.

Assuming an Allied victory, it was hoped that such a map could be presented as the legitimate "offspring" of the original international map. Mass-produced versions of the various sheets could quickly be made available as the base maps for the peace negotiations that would follow the war. The explicit objective was to ensure that the new political boundaries of Europe and the Middle East would be shown to an expectant world on a British map designed and produced by British cartographers in London, an ambition openly discussed in a *Times* editorial entitled "Geographers and the war" (May 18, 1915, p. 2, col. b). To underscore the political impact of the new map, it was also anticipated that thematically modified versions of individual sheets (showing a range of other variables such as ethnicity and language) could also be produced to undermine the claims of Central Powers and reinforce the legitimacy of the Allied geopolitical ideals. Militarily, it was also hoped (particularly by the intelligence officers in the Naval Intelligence Department) that the new 1:1 million sheets would be useful strategically in the less effectively mapped Ottoman lands of the Middle East (on cartographic innovations in these regions, see Collier 1994; Gavish and Biger 1985).

To some extent, these ambitions were realized. By the end of the war, ninety 1:1 million map sheets had been produced by the RGS cartographers, covering the whole of Europe, the Middle East, and North Africa. Most had been derived from existing foreign maps at different scales, but many of the Russian and Ottoman sheets had been based on intelligence reports supplied by British military attachés with the Tsarist armies in the east or by intelligence officers operating in the Middle East, including T.E. Lawrence, D.G. Hogarth, Gertrude Bell, and W.H.I. Shakespear. The RGS 1:1 million sheets were indeed used as one of the principal base maps for the Paris Peace Conferences in 1919-1920, but their military importance was minimal. For the most part, the war was fought along the static quagmire of trenches, a troglodyte world of mass killing that gave a tragic irony to the continental, indeed global, imagination of those laboring over their maps in the Royal Geographical Society. But such cartographic visions gave sustenance to those, the so-called "Easterners" in the British political and military establishment, who had campaigned throughout the war for a more



assertive non-European, imperial alternative to the deadlock in Europe, one that would allow Britain's under-used naval power to be deployed against the relatively weak Ottoman Empire. Despite the failure of the attempt to capture Constantinople through the hell-fire of Gallipoli in 1915, the Royal Geographical Society (particularly the NID section of its operation under the direction of D.G. Hogarth) was a significant metropolitan focus promoting T.E. Lawrence's plan for a naval attack on the Middle East, coupled with an Arab Revolt, a campaign that paved the way for Britain's post-war imperial dominance of the Middle East (Heffernan 1996).

## Maps, War, and Nation: The View from Paris

The equivalent organization to the Royal Geographical Society in the French capital was the Société de Géographie de Paris (SGP). Established in 1821, nine years earlier than its sister society in London, it was nevertheless a much smaller organization with just 2,000 members in 1914, though it stood at the center of a much larger French network of geographical societies, with a total membership of perhaps 20,000 (Heffernan 1995; Schneider 1990). Like the Royal Geographical Society, the Société de Géographie de Paris was a distinguished academic-cum-political club that boasted new headquarters on the Boulevard Saint Germain, on the edge of the Latin Quarter on the left bank of the Seine, a short walk from the Sorbonne and the Grandes Écoles (Fierro 1983; Lejeune 1982).

Despite its more modest size, the Société de Géographie de Paris was enthusiastically supported by university academics in Paris, particularly the distinguished group of regional geographers associated with Paul Vidal de la Blache (Berdoulay 1981, pp. 141-227; Buttner 1971; Sanguin 1993), and by powerful patrons, led by the Society's President, Prince Roland Bonaparte. The moment war was declared, the society's Secretary, Baron Étienne Hulot, offered the society's map collection, library, and other resources to the recently restructured Service Géographique de l'Armée, directed by Général Bourgeois (Anon 1918-1919; Lévy 1926;

Ministère de la Défense Nationale et de la Guerre 1938; Service Géographique de l'Armée 1936).<sup>10</sup>

Aware of the international renown of French geographers, Bourgeois promptly "recruited" several of the country's leading practitioners (including de la Blache, Albert Demangeon, Lucien Gallois, Emmanuel de Martonne, and Emmanuel de Margerie) to work on a new Commission de Géographie producing thematic maps and short reports on the human and physical geography of different European regions for use by the French General Staff (see also Hanna 1996).<sup>11</sup> One of the stranger aspects of this exercise was the deadly serious instruction that the Commission's reports should not include German geographical expressions such as "hinterland."<sup>12</sup>

While this work continued, the monthly public meetings of the Société de Géographie de Paris were, like those in the Royal Geographical Society, devoted to geographical studies of the war in different parts of the world and were likewise published, complete with dozens of maps, in the society's journal, *La Géographie* (Hulot 1914-1915). These included lectures speculating on the most appropriate political geography of Europe after the war, assuming an Allied victory. The working assumption was that the Austro-Hungarian and the Ottoman Empires would be completely dismantled and the German Empire massively diminished and entirely re-organized (see, for example, Henry 1917; Leger 1914-1915; Lichtenberger 1917). German geographers, including those whose researches had been warmly received before 1914, were roundly criticized as supine agents of German imperial expansion (Rabot 1917). A semi-organized campaign was also waged to influence the political opinions of scientists in neutral countries. De Martonne produced a special leaflet in 1917 detailing the destruction of cherished historical landscapes under German military occupation, a text then dispatched to academics in neutral countries. When a Professor Hein, from Zurich University, returned the leaflet without comment, a furious de Martonne wrote back on April 4, 1917: "these outrages require more than a shrug of the shoulders... It is Germany that will carry, for ever, the responsibility for having unleashed the most appalling conflagration in history... Gott strafe Deutschland!"<sup>13</sup> In general, French geographers seemed less willing than their British counterparts to criticize their military and political

<sup>10</sup> This section is based on various published and unpublished materials on the Société de Géographie de Paris, housed in the archives of the Société de Géographie de Paris, Salle des Cartes et Plans, Bibliothèque Nationale, Paris [BN-SGP]. For a detailed study of the colonial geopolitics of the SGP during World War I, see Heffernan (1995) and, more generally, Lejeune (1993).

<sup>11</sup> Archives de la Guerre, Château de Vincennes, Paris [AG] 9.N.110: Commission de Géographie, Service Géographie de l'Armée, 1914-19.

<sup>12</sup> BN-SGP 9bis/2316—Letter to Général Bourgeois from Lieutenant-Colonel de Gennes, June 20, 1915.

<sup>13</sup> BN-SGP 9bis/2316—Letter to Professor Hein from Emmanuel de Martonne, April 4, 1915.

establishment, though this possibly reflected the even more draconian censorship restrictions imposed in France (see, for example, Malterre 1917, an article in which several paragraphs were “supprimé par la Censure”).

Over a year into the conflict, by which time France had lost almost a million men, Aristide Briand became the new Prime Minister. A self-styled radical, Briand rightly understood that public support for the war could not be guaranteed. Many on the left now believed the war had become an end in itself rather than a means to an end. The absence of wider geopolitical objectives or a higher reason for continuing the slaughter (beyond the need to remove German forces from French soil) seemed a disturbing problem. At the same time, representatives from neutral countries, including the United States, had begun to call on all countries involved in the conflict to declare clear war aims that might at least raise the distant prospect of a negotiated peace (Stevenson 1982).

Briand decided to establish a high-level academic committee, operating alongside the Commission de Géographie, to formulate a set of intellectually compelling geopolitical objectives that could form the basis of France's negotiating position following an Allied victory. Four separate committees were established in February 1916 to devise French territorial claims relating to the Franco-German border, central Europe, Africa, and Asia-Oceania. The venue for these weekly committee meetings, which included sixty leading French geographers, historians, economists, geologists, and engineers, was the headquarters of the Société de Géographie de Paris. Again, the SGP's ostensibly independent scientific status and close connections to government were crucial considerations, as was its unrivalled map collection. Briand, who enjoyed the company of intellectuals, placed his faith firmly in the glittering stars of the French academic firmament in the hope that they would be able to devise a new French vision of Europe and the wider world.

After a year of exhaustive research, in which dozens of reports were produced by full-time members of these committees plus co-opted experts, the two non-European committees produced provisional reports, complete with dozens of maps, outlining French policy for the colonial arena (Heffernan 1995). The more important European committees, on the Franco-German border and central Europe, had yet to complete their deliberations and merged into a single agency in February 1917, the so-called Comité d'Études. The president of this new committee

was the nearest France had to an official historian, Ernest Lavisse; its vice-president was Paul Vidal de la Blache, Lavisse's friend and long-time collaborator; and its secretary was Emmanuel de Martonne, de la Blache's student and son-in-law. Work continued throughout the rest of the war, both at the Société de Géographie de Paris and at the Institut de Géographie in the Sorbonne.<sup>14</sup>

On the eve of the Peace Conferences in early 1919, the Comité published a huge two-volume report, the nearest the French government came to an official statement on the future political geography of Europe (Comité d'Études 1918-1919). This was accompanied by some of the most remarkable maps produced anywhere during the war, all of which were designed to reinforce the French negotiating position. There is much that could be written about this remarkable document, but the central point to emphasize here is the overwhelming importance of the Franco-German border, the single topic considered in the first volume. The main objective, which surprised no-one, was to ensure the return to France of the “lost” provinces of Alsace and Lorraine, plus the economically important area of the Saar coal-field: the re-establishment, in other words, of the cherished “limites naturelles” of the French hexagon (Heffernan 2001). The provinces of Alsace and Lorraine were presented in the strongly Lamarckian terms so characteristic of the Vidalian school; as a kind of “social organism” ordained by natural and historical forces to be restored to France (Archer 1993). This, at least, was the public version, though it should be noted that the members of the Comité d'Études were acutely aware of the huge difficulties of reintegrating a region that had been substantially transformed by almost fifty years of German control. Lest anyone doubt the “indisputable” nature of France's claim to Alsace-Lorraine, the Comité's report provided some 500 pages of detailed historical, archaeological, architectural, ethnographic, linguistic, economic, and sociological evidence by way of proof.

The pressure of this Herculean task probably hastened the demise of Vidal de la Blache, who died before the final report was published, but the work he undertook while involved with the Comité lives on in the form of his last, and arguably finest, piece of writing, *La France de l'Est* (Vidal de la Blache 1917, esp. pp. 1-6). Vidal de la Blache's fellow geographers on the Comité, including de Martonne, de Margerie, Demangeon, Gallois, and Jean Brunhes, were all prominently involved as members of the Service Géographique Française, established to advise

<sup>14</sup> BN-SGP 9/2278-82, 2284-2287—Comité d'Études: Correspondence.

French political leaders on geographical questions during the Paris Peace Conferences in 1919 and 1920, particularly in regard to the borders of the new states in south-central Europe (see, for example, Wilkinson 1951; Palsky 2002; and, more generally, Brunhes and Vallaux 1921). The same men would also shape the development of French geography through the inter-war years, based in large measure on their experiences in World War I (Claval 1998 pp. 153-294; see, for example, Demangeon and Febvre 1935).

While the Royal Geographical Society acted as a metropolitan node in Britain's "imperial archive" and focused on the production of maps and the development of schemes to project the war onto a "winnable" imperial dimension, the Société de Géographie de Paris became a node in France's "national archive," a center of geographical and cartographic calculation that reflected a characteristically French faith that intellectuals from the Sorbonne and the Collège de France could devise elegant geographical, historical, and, above all, cartographic arguments about the sovereignty of the national space.

## Maps, War, and the New World: The View from New York

Let us now turn to our third and final center of wartime mapping: the American Geographical Society in New York, headquartered at this time in some splendor in a large residence on Broadway, not far from Columbia University. Established in 1851, the American Geographical Society was younger than both the Société de Géographie de Paris and the Royal Geographical Society but was, nevertheless, a thriving and successful organization with over 3,000 members by the summer of 1916. Its success was due in no small measure to its energetic and ambitious young Director, Isaiah Bowman, later President of Johns Hopkins University and an influential foreign policy commentator through the inter-war years (see Martin 1980; Smith in press; Wright 1952; and, more generally, Schulten 2001, p. 176-203).<sup>15</sup>

During the early months of the war, the American Geographical Society continued its work more or less as normal, but things changed dramatically after the United States declared war on Germany in April 1917. While accepting that the war was in every respect calamitous, President Woodrow Wilson nevertheless believed the conflict provided the opportunity for a

fresh start in Europe. Although he had steered the United States into the war on the Allied side, Wilson believed that his government could act as an honest, disinterested, and objective arbitrator between rival European powers. Who better to guide the nations of the Old World on the path to peace and justice than the U.S., a new nation pledged to "make the world safe for democracy?" The war thus marked America's "coming of age," claimed Wilson, an opportunity for America to demonstrate to its parent continent a new-found maturity and sophistication (Walworth 1976).

Having pressured European leaders into clarifying their war aims, Wilson decided that the United States should establish a far more ambitious and less partisan investigation of the world's geopolitical problems. The Inquiry (or, as it is often mistitled, the House Inquiry after its largely inactive chairman, Colonel Edward Mandell House) was established in April 1917 as a fact-finding, geopolitical think tank. Like the Comité d'Études, it comprised some of the finest minds in American academia, in the anticipation that they could conjure up rational solutions to the problems of the world. Once again, it was decided to locate this project outside the structures of formal governmental agencies, in the belief that information amassed and conclusions reached by an ostensibly neutral, disinterested, and scholarly organization would have the desired aura of scientific credibility. Originally based in cramped offices in the New York Public Library, the Inquiry moved (following energetic lobbying by Bowman) to the AGS that November, lured by the possibility of using the Society's enormous map collection. Although Bowman was technically only Chief Territorial Specialist, he quickly became what his co-worker on the Inquiry, Charles Seymour, subsequently President of Yale, called "the presiding genius" behind the operation (Seymour 1951, p. 2; see also Gelfand 1963).

The Inquiry's objective was the collection of a vast corpus of historical, economic, environmental, and ethnological data, mainly on Europe, which could be condensed into a catalogued, cross-referenced archive of stark incontrovertible fact, a mobile data bank that could eventually be shipped across the ocean to Europe, where a post-war Peace Conference was destined to take place. The display of this material in map form remained a central—indeed probably the central—preoccupation of the Inquiry. Where Europeans had traditionally relied on old, partisan arguments, it was hoped that the United States would bring clear, indisputable facts to cut through the

<sup>15</sup> This section is based on the published records of the American Geographical Society and on unpublished materials in the AGS archives in New York, particularly the correspondence of Isaiah Bowman (catalogued by correspondent and year). The arguments are put forward in greater detail in Heffernan (1999).



<i>Director</i>	S.E. Mezes	College of the City of New York
<i>Chief Territorial Specialist</i>	Isaiah Bowman	American Geographical Society
<i>Regional Specialists</i>		
Franco-German border	Charles Haskins	Harvard University
Poland and Russia	R.H. Lord	Harvard University
Austria-Hungary	Charles Seymour	Yale University
Italy	W.E. Lunt	Haverford College
The Balkans	Clive Day	Yale University
Western Asia	W.L. Westermann	University of Wisconsin
Far East	S.K. Hornbeck	United States Army
Colonial problems	George L. Beer	formerly of Columbia University
<i>Economic Specialist</i>	A.A. Young	Cornell University
<i>Librarian and Historical Specialist</i>	James T. Shotwell	Columbia University
<i>Boundary Specialist</i>	Douglas Johnson	Columbia University
<i>Chief Cartographer</i>	Mark Jefferson	State Normal School, Ypsilanti

Source: Mezes 1921

**Table 1.** The organization of the American "Inquiry," 1917-19.

cant and bad faith that had undermined European agreements in the past. The assumption was that perfectly rational solutions would logically emerge from the Inquiry's painstakingly acquired information. As Bowman put it several years later in a letter to a colleague in England:

Where the experts of [other] nations came fully stocked with ideas, they did not have the mass of information assembled in a flexible, workable form. Only the U.S. delegation has such a resource, and we anticipated that this would give us a negotiating advantage even over the French, in whose capital city the fate of Europe and the Near East would be decided.<sup>16</sup>

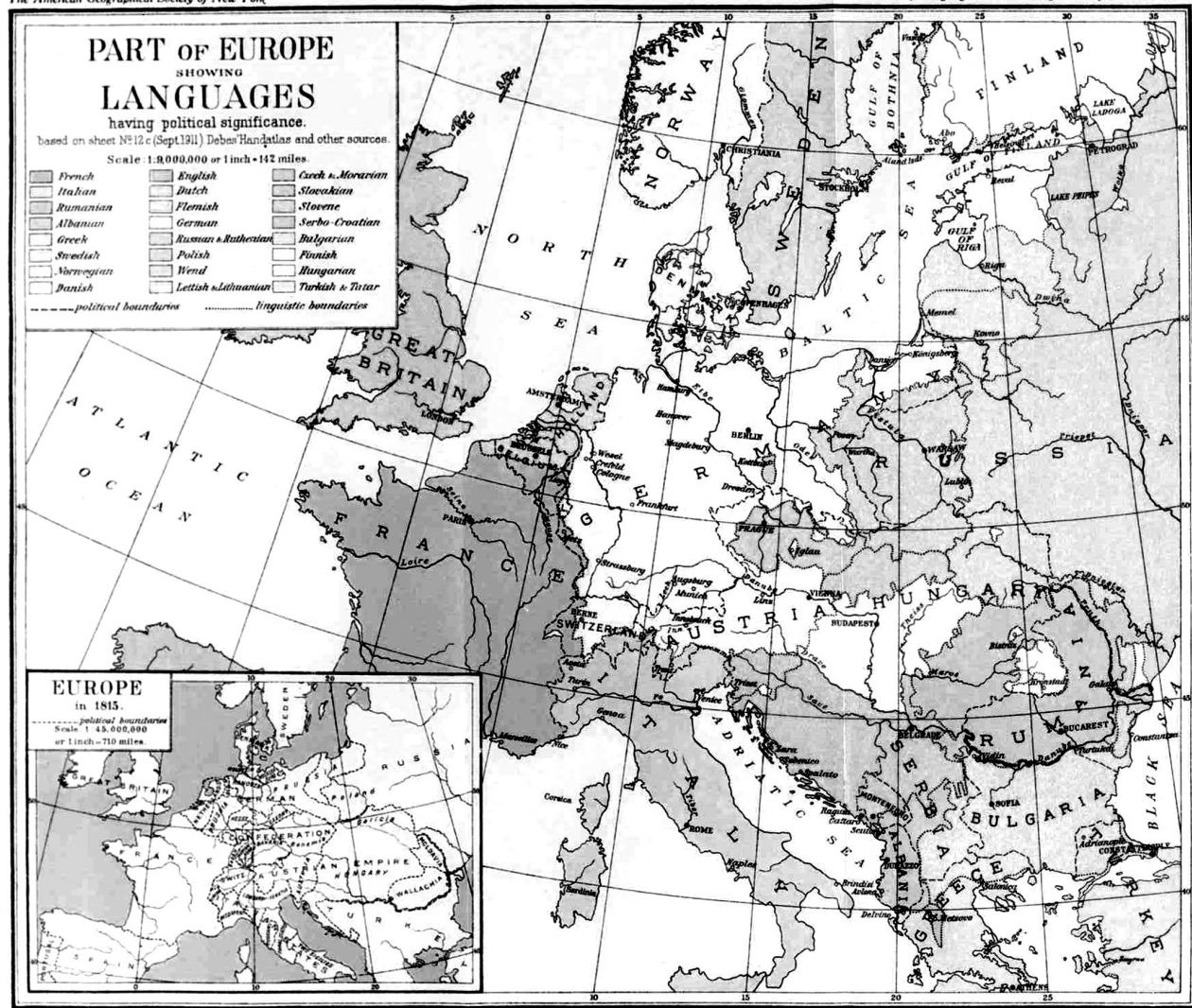
By the beginning of 1918, a hundred-and-fifty academics were working more-or-less full-time on the Inquiry, organized on a regional basis with a specialist academic in charge of each area (Table 1). The Inquiry's all-important cartographic work was directed by Mark Jefferson, assisted by Bowman himself and Douglas Johnson, Professor of Physiography at Columbia University, who was the official specialist on boundaries. The latter had been a member of the American Rights League, which had campaigned for American military support of the Allies. In this capacity, he had penned numerous anti-German pamphlets, including a memorable work entitled *The Peril of Prussianism* (1917) (see also Johnson 1917a; 1918; 1921). The Inquiry also drew on the expertise

of other American geographers with mapmaking experience, including W.M. Davis, Wallace Atwood, Albert Perry Brigham, and Ellen Churchill Semple, who all collected data and wrote briefing documents on different parts of Europe. Money seemed no object, and materials flooded into the AGS offices from libraries across North America and from London and Paris, where the tenacious Johnson spent several months. By the end of the war, the Inquiry had become one of the most exhaustive and ambitious exercises in geographical and historical data collection ever attempted.

In view of the Inquiry's inductive reasoning, it is perhaps unsurprising that no single report or set of recommendations was ever produced, and the materials so painstaking brought together were subsequently returned to the numerous libraries whence they came. Wilson and his advisers had hoped that a logical conclusion would emerge during the negotiations based on America's unique archive of fact. This huge collection of material, including perhaps the largest single shipment of maps ever to cross the Atlantic, was duly despatched to Paris on the *USS George Washington* at the end of the war to be carefully re-assembled, supervised by Bowman and the other members of the delegation, at the U.S. headquarters in the Hôtel Crillon on the Place de la Concorde. This was to be the center of New World reason and rationality in Europe, the basis of America's contribution to world peace.

Wilson's policy, ambiguously expressed in his famous fourteen points, was wedded to the ideal of national self-determination. Despite its studiously neutral rhetoric, the Inquiry had to support that ideal. A central objective, therefore, was to identify those European peoples who had scientifically valid claims to nationhood. The implicit assumption behind this self-consciously rational geopolitical theorizing was that American intellectuals could bring to bear unique perspectives, particularly concerning questions of race and language, based on the United States' exceptional experience as an immigrant nation, a melting pot of European peoples. Unlike

<sup>16</sup> American Geographical Society Archives, Bowman Papers—Letter from Bowman to Frank Debenham, July 12, 1929.



**Figure 6.** An American map of the language geography of Europe, 1917. [Source: Dominian, L. 1917. *Frontiers of Language and Nationality in Europe*. American Geographical Society, New York, USA.]

the prevailing polygenesis theories of race that still dominated in Europe, and which postulated irreconcilable racial differences, the American experience seemed to suggest that race was more a dynamic, environmentally determined concept, susceptible to development, notably through racial intermingling (e.g., Ripley 1899). This, of course, was a central tenet of liberal, American assimilationism and might logically have been used to argue for a United States of Europe, modeled directly on the United States of America. While a few optimists argued for precisely this outcome, this ideal seemed utopian, even to the most ambitious American delegates. The compromise, which served the ideals of national self-determination while underlining the fluidity of racial categories, was the argument, adopted in numerous Inquiry reports and publications, that there were twenty-five European peoples who had the right to nationhood

(for a variant on this claim that emphasized language rather than race, see Dominian 1917, a work commissioned for the Inquiry by Bowman) (Figure 6). As another American author expressed it in 1919:

Twenty-five human groups . . . show such unity of purpose and ideal, and such community of interest, of history, and of hopes, and each in such reasonable numbers, that they have embarked or deserve to embark on a career of nationality (Brigham 1919, p. 219).

For most members of the Inquiry, the political geography of Europe should reflect this “scientifically proven” fact. If such a re-organization could be achieved, the threat of future war would be hugely diminished.

The problem, of course, was that the ideal of national self-determination was unlikely to be accepted as a universal principle because it challenged the ter-

ritorial integrity of virtually all states, not only the former enemy states of Germany, Austria-Hungary, and the Ottoman Empire and the new pariah state of Bolshevik Russia but also the former allied empires of Britain and France. Indeed, the American Civil War had been waged precisely to crush those southern states that aspired to independent nationhood. The result was a selective imposition of national self-determination in order to transfer territory from the former enemy states either to newly independent states in central and eastern Europe or to the allied imperial states of Britain and France (Heffernan 1998, pp. 113-19; see also Bowman 1921).

Although the hopes of the American delegation in Paris were quickly dashed, the casualty of European "realpolitik" and the mounting opposition to Wilsonian internationalism in the United States, the story of the American Geographical Society and the Inquiry provides a different perspective on the role of geographical knowledge in wartime. This was not an imperial archive in the British sense, still less was it a nationalist one in the French fashion. The House Inquiry reflected more directly than either of these other two examples what Richards (1993) has called the "fantasy of information," the myth that the acquisition and control of "pure," objective knowledge was the ultimate route to power.

## Conclusions

The foregoing analysis provides no more than a series of vignettes on the politics of cartography in the opening years of the twentieth century. There are many questions that remain unanswered here. While this essay suggests how cartographic production can be interpreted in political terms, and how maps themselves reflect particular historical circumstances, it remains extremely difficult to establish precisely how, and to what extent, cartography shaped or altered political attitudes. The fact that governments and armed forces in this period devoted so much time and energy to the production of new forms of cartography, beyond the more fundamental forms of military and topographical mapping, is at least indicative that maps were perceived to have a much wider geopolitical importance, but much more detailed empirical work is needed on the political impact of specific maps and mapping projects.

It should also be emphasized that the case studies selected here merely hint at the complexities of the relationship between cartography and politics in this period. Much more could be written about each of the maps and mapping projects described above, and these stories could be extended, and modified, by

consideration of the political cartography produced in Germany, Austria-Hungary, Italy, and Japan and in a host of smaller countries as well. The inclusion of material from these different arenas would certainly modify the story told above, but the larger argument on which this story rests—that maps were intensely political objects whose production, distribution, and reception were determined by, and may even have shaped, political circumstance—is sufficiently simple and robust (not to say self-evident) to be seen as a generally valid observation, the nuances of which can and should be explored in other historical and geographical contexts.

## REFERENCES

- Atkinson, D. 1995. Geopolitics, cartography and geographical knowledge: Envisioning Africa from fascist Italy. In: M. Bell, R. Butlin and M. Heffernan (eds), *Geography and Imperialism, 1820-1940*. Manchester, U.K.: Manchester University Press. pp. 265-97.
- Andrew, C. 1968. *Théophile deLacassé and the making of the Entente Cordiale: A re-appraisal of French foreign policy, 1898-1905*. London, U.K.: Macmillan.
- Andrew, C. 1985. *Secret service: The making of the British intelligence community*. London, U.K.: Heinemann.
- Anon. 1918-1919. Le service géographique de l'armée et la cartographie de guerre. *La Géographie* 32: 463-84.
- Anon. (Hinks, A.R.?) 1919. War work of the Society. *Geographical Journal* 53: 336-9.
- Anon. (Wright, J.K.?) 1946. The map of Hispanic America on the scale of 1:1,000,000. *Geographical Review* 36: 1-28.
- Archer, K. 1993. Regions as social organisms: The Lamarckian characteristics of Vidal de la Blache's regional geography. *Annals of the Association of American Geographers* 83: 498-514.
- Balchin, W. 1987. United Kingdom geographers in the Second World War. *Geographical Journal* 153: 159-80.
- Berdoulay, V. 1981. *La formation de l'école française de géographie (1870-1914)*. Bibliothèque Nationale/Comité des Travaux Historiques et Scientifiques, Paris, France.
- Black, J. 1997. *Maps and politics*. London, U.K.: Reaktion.
- Blouet, B.W. 1987. *Halford Mackinder: A biography*. College Station, Texas: University of Texas A&M Press.
- Bogue, A.G. 1998. *Frederick Jackson Turner: Strange roads going down*. Norman, Oklahoma: University of Oklahoma Press.
- Bowman, I. 1921. *The New World: Problems of political geography*. Yonkers-on-Hudson, New York: World Book Company.
- Bowman, I. 1948. The geographical situation of the United States in relation to world policies. *Geographical Journal* 112: 128-45.
- Brigham, A. 1919. Principles in the determination of boundaries. *Geographical Review* 7: 210-19.



- Brotton, J. 1997. *Trading territories: Mapping the early-modern world*. London: Reaktion.
- Brunhes, J., and C. Vallaux. 1921. *La géographie de l'histoire: Géographie de la paix et de la guerre sur terre et sur mer*. Paris, France: F. Alcan.
- Buisseret, D (ed.). 1992. *Monarchs, ministers and maps: The emergence of cartography as a tool of government in early modern Europe*. Chicago, Illinois: University of Chicago Press.
- Buttimer, A. 1971. *Society and milieu in the French geographical tradition*. Washington, D.C., and Chicago, Illinois: Association of American Geographers and Rand McNally.
- Chasseaud, P. 1991. *Topography of Armageddon: A British trench map atlas of the Western Front 1914-1918*. Lewes,: Mapbooks.
- Chasseaud, P. 1998. *Artillery's astrologers: A history of British survey and mapping on the Western Front*. Lewes, U.K.: Mapbooks.
- Claval, P. 1998. *Histoire de la géographie française de 1870 à nos jours*. Paris, France: Nathan.
- Collier, P. 1994. Innovative military mapping using aerial photography in the First World War: Sinai, Palestine and Mesopotamia, 1914-1919. *Cartographic Journal* 31: 100-104.
- Comité d'Études. 1918-1919. *Travaux du Comité d'Études*, Vol. I: *L'Alsace-Lorraine et la frontière du Nord-Est*; Vol. II: *Questions Européennes—Belgique, Slesvig, Tchécoslavaquie, Pologne et Russie; Questions Adriatiques—Yougoslavie, Roumanie, Turquie d'Europe et d'Asie*; Vol. III: *Atlas*. Paris, France: Imprimerie Nationale.
- Commission impériale de Russie à l'exposition universelle de 1900. 1900. *Catalogue générale de la section Russe*. Paris, France: Imprimerie Paul Dupont.
- Crone, G.R. 1962. The future of the International Map of the World. *Geographical Journal* 128: 36-8.
- Daragon, H., and E. Dolis. 1896. *Le Tsar à Paris en 1896*. Paris, France: F. Alcan.
- Demangeon, A., and L. Febvre. 1935. *Le Rhin: Problèmes d'histoire et d'économie*. Paris, France: Armand Colin.
- Dominian, L. 1917. *Frontiers of language and nationality in Europe*. American Geographical Society, New York, USA.
- Dunbar, G. 1974. Élisée Reclus and the Great Globe. *Scottish Geographical Magazine* 90: 57-66.
- Edney, M. 1997. *Mapping an empire: The geographical construction of British India, 1765-1843*. Chicago, Illinois: University of Chicago Press.
- Fierro, A. 1983. *La Société de Géographie de Paris (1826-1946)*. Paris, France, and Geneva, Switzerland: Librairie H. Champion and Librairie Droz.
- Fischer, F. 1967. *Germany's war aims in the First World War*. London, U.K.: Chatto and Windus.
- Gardiner, R.A. 1961. A re-appraisal of the International Map of the World (IMW) on the millionth scale. *International Yearbook of Cartography* 1: 31-49.
- Gavish, D., and G. Biger. 1985. Innovative cartography in Palestine 1917-8. *Cartographic Journal* 22: 38-44.
- Gelfand, L. 1963. *The Inquiry: American preparations for peace, 1917-1919*. New Haven, Connecticut: Yale University Press.
- Godlewska, A. 1999. *Geography unbound: French geographic science from Cassini to Humboldt*. Chicago, Illinois: University of Chicago Press.
- Greenhalgh, P. 1988. *Ephemeral vistas: The Expositions Universelles, Great Exhibitions and World's Fairs, 1871-1939*. Manchester, U.K.: Manchester University Press.
- Hanna, M. 1996. *The mobilization of intellect: French scholars and writers during the Great War*. Cambridge, Massachusetts: Harvard University Press.
- Harley, J.B. (P. Laxton, ed.). 2001. *The new nature of maps: Essays in the history of cartography*. Baltimore, Maryland: Johns Hopkins University Press.
- Harris, C. 1997. Geographers in the U.S. government in Washington, D.C., during World War II. *Professional Geographer* 49: 245-56.
- Heffernan, M. 1995. The spoils of war: the *Société de Géographie de Paris* and the French Empire, 1914-1919. In: M. Bell, R. Butlin, and M. Heffernan (eds), *Geography and Imperialism, 1820-1940*. Manchester, U.K.: Manchester University Press. pp. 221-64.
- Heffernan, M. 1996. Geography, cartography and military intelligence: The Royal Geographical Society and the First World War. *Transactions of the Institute of British Geographers* 21: 504-33.
- Heffernan, M. 1998. *The meaning of Europe: Geography and geopolitics*. London, U.K.: Arnold.
- Heffernan, M. 1999. Inaugurating the American century: "New World" perspectives on the "Old" in the early twentieth century. In: D. Slater and P. Taylor (eds), *The American Century: Consensus and Coercion in the Projection of American Power*. Oxford, U.K.: Blackwell. pp. 113-35.
- Heffernan, M. 2001. History, geography and the French national space: The question of Alsace-Lorraine, 1914-18. *Space and Polity* 5: 27-48.
- Henry, R. 1917. La monarchie habsbourgeoise: sa composition ethnographique et sa formation historique—point de vue français et européen. *La Géographie* 31: 381-86.
- Herb, G. 1997. *Under the map of Germany: Nationalism and propaganda, 1918-1945*. London, U.K.: Routledge.
- Hess, R.L. 1963. Italy and Africa: Colonial ambitions in the First World War. *Journal of African History* 4: 105-26.
- Hogarth, D. 1915. Geography of the war theatre in the Near East. *Geographical Journal* 45: 457-71.
- Hulot, E. 1914-1915. La Société de Géographie pendant la guerre. *La Géographie* 30: 84-8.
- International Geographical Congress. 1896. *Report of the Sixth International Geographical Congress, London, 1895*. London, U.K.: John Murray.
- International Geographical Congress. 1901. *Verhandlungen des Siebenten Internationalen Geographen-Kongresses, Berlin, 1899*. Two volumes. Berlin, Germany: W.H. Kuhl.
- International Geographical Congress. 1905. *Report of the Eighth International Geographic Congress held in the*

- United States, 1904. Washington, D.C.: Government Printing Office.
- International Geographical Congress. 1909-11. *Neuvième Congrès international de géographie, Genève, 27 juillet-6 août 1908: compte rendu des travaux de Congrès publié au nom du Comité d'organisation par Arthur de Claparède*. Two volumes. Geneva, Switzerland: Société Générale d'Imprimerie.
- International Geographical Congress. 1915. *Atti del X Congresso Internazionale di Geografia, Roma 1913*. Two volumes. Rome, Italy: Presso de Reale Società Geografia.
- Jacob, C. 1992. *L'Empire des cartes: approche théorique de la cartographie à travers l'histoire*. Paris, France: Albin Michel.
- Jardine, L. 1996. *Worldly goods: A new history of the Renaissance*. London, U.K.: Macmillan.
- Johnson, D. 1917. *The peril of Prussianism*. New York, New York: G.P. Putnam's and Sons.
- Johnson, D. 1917a. *My German correspondence concerning Germany's responsibility for the war and for the method of its conduct, being a letter from a German professor and a reply*. n.p., New York, USA.
- Johnson, D. 1918. *Topography and strategy in the War*. London, U.K.: Constable and Co.
- Johnson, D. 1921. *Battlefields of the World War, Western and Southern Fronts: A study in military geography*. American Geographical Society, New York, USA.
- Johnston, H.H. 1915. Political geography of Africa before and after the war. *Geographical Journal* 45: 273-301.
- Kain, R.J.P., and E. Baigent. 1992. *The cadastral map in the service of the state: A history of property mapping*. Chicago, Illinois: University of Chicago Press.
- Kaiser, W. 1999. Vive la France! Vive la République? The cultural construction of French identity at the World Exhibitions in Paris, 1855-1900. *National Identities* 1: 227-44.
- Kearns, G. 1984. Closed space and political practice: Frederick Jackson Turner and Halford Mackinder. *Environment and Planning D: Society and Space* 21: 23-34.
- Kearns, G. 1993. Fin de siècle geopolitics: Mackinder, Hobson and theories of global closure. In: P.J. Taylor (ed.), *Political Geography of the Twentieth Century: A Global Analysis*. London, U.K.: Belhaven. pp. 9-30.
- Kennan, G.F. 1984. *The fateful alliance: France, Russia, and the coming of the First World War*. Manchester, U.K.: Manchester University Press.
- Kennedy, P. 1988. *The rise and fall of the Great Powers: Economic change and military conflict from 1500 to 2000*. London, U.K.: Unwin Hyman.
- Korinman, M. 1990. *Quand l'Allemagne pensait le monde: grandeur et décadence d'une géopolitique*. Paris, France: Fayard.
- Kost, K. 1988. *Die Einflüsse der Geopolitik auf Forschung und Theorie der Politischen Geographie von ihren Anfängen bis 1945. Ein Beitrag zur Wissenschaftsgeschichte der Politischen Geographie und ihrer Terminologie unter besonderer Berücksichtigung von Militär- und Kolonialgeographie*. Bonn, Germany: F. Dümmler.
- Konvitz, J. 1987. *Cartography in France, 1660-1848: Science, engineering and statecraft*. Chicago, Illinois: University of Chicago Press.
- Latour, B. 1987. *Science in action: How to follow scientists and engineers through society*. Milton Keynes, U.K.: Open University Press.
- Leger, L. 1914-15. Les slaves d'Autriche-Hongrie. *La Géographie* 30: 161-81.
- Lejeune, D. 1982. La société de géographie de Paris: un aspect de l'histoire sociale française. *Revue d'Histoire Moderne et Contemporaine* 29: 141-63.
- Lejeune, D. 1993. *Les sociétés de géographie en France et l'expansion coloniale au XIXe. siècle*. Paris, France: Albin Michel.
- Levy, A. 1926. *Les coulisses de la guerre: le Service Géographique de l'Armée 1914-1918*. Service géographique de l'armée, Paris, France.
- Lichtenberger, H. 1917. Le projet allemand d'une Europe central. *La Géographie* 31: 310-12.
- Mackinder, H.J. 1904. The geographical pivot of history. *Geographical Journal* 23: 421-42.
- Mackinder, H.J. 1919. *Democratic ideals and reality: A study in the politics of reconstruction*. London, U.K.: Constable.
- MacLeod, M.N. 1926. The present state of the International 1/M Map. In: *Professional Papers: New Series, No. 10—Papers Read at the British Association Meeting of 1925 on the Work of the Ordnance Survey (including an account of the work of the International Bureau of the 1/M Map which is located at the Ordnance Survey Office, Southampton)*. London, U.K.: Her Majesty's Stationery Office. pp. 11-13.
- Malterre, Général. 1917. Les variations des fronts de guerre et situation générale actuelle. *La Géographie* 31: 140-51.
- Martin, G. 1980. *The life and thought of Isaiah Bowman*. Hamden, Connecticut: Archon Books.
- Mehmel, A. 1995. Deutsche Revisionspolitik in der Geographie nach dem ersten Weltkrieg. *Geographische Rundschau* 47: 498-505.
- Meinig, D.W. 1999. *The shaping of America: A geographical perspective on 500 years of history, Vol. III: Transcontinental America, 1850-1915*. New Haven, Connecticut: Yale University Press.
- Mezes, S. 1921. Preparations for peace. In: E. House and C. Seymour (eds.), *What really happened in Paris: The Society of the Peace Conference, 1918-1919, by the American delegates*. London, U.K.: Hodder and Stoughton. pp. 1-16.
- Ministère de la Défense Nationale et de la Guerre. 1938. *Le Service Géographique de l'Armée: Son histoire, son organisations, ses travaux*. Paris, France: Imprimerie Nationale.
- Mouvement Social. 1992. Theme issue on 1900 Exposition Universelle Internationale in Paris. 16.
- Murphy, D. 1997. *The heroic earth: Geopolitical thought in Weimar Germany 1918-1933*. Kent, Ohio: Kent State University Press.
- Musée Nationale du Château de Compiègne. 2001. *Un Tsar à Compiègne: Nicolas II, 1901*. Compiègne, France: Musée Nationale.
- Ô Tuathail, G. 1996. *Critical geopolitics*. Minneapolis, Minnesota: University of Minnesota Press.

- Palsky, G. 2002. Emmanuel de Martonne and the ethnographical cartography of central Europe (1917-1920). *Imago Mundi* 54. In press.
- Penck, A. 1892. Die Herstellung einer einheitlichen Erdkarte im Maßstabe von 1:1,000,000. In: International Geographical Congress. *Compte Rendu du Vème Congrès International des Sciences Géographiques tenu à Berne du 10 au 14 août 1891* (Berne). Berne, Switzerland: Schmid, Francke & Cie., 191-98.
- Penck, A. 1893. Construction of a map of the world on a scale of 1:1 million. *Geographical Journal* 1: 253-61.
- Penck, A. 1915. Politische-geographische Lehren des Krieges. *Meereskunde* 9-10: 12-21.
- Penck, A. 1916. Der Krieg und das Studium der Geographie. *Zeitschrift des Gesellschaft für Erdkunde zu Berlin* 159-76, 222-48.
- Picard, A. 1902-1903. *Exposition universelle internationale de 1900: Rapport général administratif et technique*. Eight volumes. Paris, France: Imprimerie Nationale.
- Rabot, C. 1917. La géographie en Allemagne pendant la guerre. *La Géographie* 31: 123-26.
- Raffalovitch, A. n.d. La Russie à l'exposition. In: *Figaro illustré: les sections étrangères à l'exposition universelle de 1900 (Allemagne—Autriche—Espagne—Italie—Pays-Bas—Russie—Suède)*. Le Figaro, Paris, France. pp.1-9.
- Royal Geographical Society [various authors]. 1917. *The geography of the war*. London, U.K.: Royal Geographical Society.
- Richards, T. 1993. *The imperial archive: Knowledge and the fantasy of empire*. London, U.K.: Verso.
- Ripley, W.Z. 1899. *The races of Europe: A sociological study*. Two volumes. New York, New York: D. Appleton & Co.
- Robic, M.-C. 1996. Les vœux des premiers Congrès: dresser la Carte du Monde. In: M.-C. Robic, A.-M. Briend, and M. Rössler (eds), *Géographes face au monde*. Comité des Travaux Historiques et Scientifiques, Paris, France. pp. 149-78.
- Rydell, R.W. 1984. *All the world's a fair: Visions of empire at America's international expositions, 1876-1916*. Chicago, Illinois: University of Chicago Press.
- Sanguin, A. 1993. *Vidal de la Blache: un génie de la géographie*. Paris, France: Belin.
- Schneider, W. 1990. Geographical reform and municipal imperialism in France, 1870-80. In: J. MacKenzie (ed.), *Imperialism and the natural world*. Manchester, U.K.: Manchester University Press. pp. 90-117.
- Schulten, S. 2001. *The geographical imagination in America, 1880-1950*. Chicago, Illinois: University of Chicago Press.
- Service Géographique de l'Armée. 1936. *Rapport sur les travaux exécutés du 1er août 1914 au 31 décembre 1919: historique du Service Géographique de l'Armée pendant la guerre*. Service Géographique de l'Armée, Paris, France.
- Seymour, C. 1951. *Geography, justice and politics at the Paris Peace Conference*. American Geographical Society, New York, USA.
- Silverman, D.L. 1989. *Art nouveau in fin-de-siècle France: Politics, psychology and style*. Berkeley and Los Angeles, California: University of California Press.
- Smith, N. In press. *The geographical pivot of history: Isaiah Bowman and the geography of the American century*. Baltimore, Maryland: Johns Hopkins University Press.
- Sinitzyn, I. 1998. On the foreign policy of Nicholas II. *International Affairs* 44: 18-30.
- Sokolov, N.A. 1926. *Ubiistvo tsarskoi sem'i* [The murder of the imperial family]. n.p. Paris, France.
- Stevenson, D. 1982. *French war aims against Germany 1914-1919*. Oxford, U.K.: Clarendon Press.
- Stoddart, D. 1992. Geography and war: The "New Geography" and the "New Army" in England, 1899-1914. *Political Geography* 11: 87-99.
- Turner, F. J. (J. M. Farager, ed.). 1998. *Re-reading Frederick Jackson Turner: "The significance of the frontier in American history," and other essays*. New Haven, Connecticut: Yale University Press.
- United Nations. 1953. The International Map of the World on the millionth scale and international co-operation in the field of cartography. *World Cartography* 3: 1-13.
- Vidal de la Blache, P. 1917. *La France de l'Est*. Paris, France: Armand Colin.
- Walworth, A. 1976. *America's moment: 1918—American diplomacy at the end of World War I*. New York, New York: W.W. Norton.
- Wilkinson, H. 1951. *Maps and politics: A review of the ethnographic cartography of Macedonia*. Liverpool, U.K.: Liverpool University Press.
- Winchester, S. 1995. Taking the world's measure: Cartography's greatest undertaking survived wars and bureaucratic snarls only to die when it was nearly done. *Civilization* 56-9.
- Wright, J.K. 1952. *Geography in the making: The American Geographical Society 1851-1951*. American Geographical Society, New York, New York.