

NOTES

INTRODUCTION PRUSSIA: WAR, THEORY AND MOLTKE

1. From Stephen J. Gould, *Leonardo's Mountain of Clams and the Diet of Worms* (New York, 1998), p. 393. Gould argues that post-modernist critique should give us a healthy scepticism towards the 'complex and socially embedded reasons behind the original formulations of our established categories'. Surely this applies to the Prussian military before 1914.
2. Gerhard Weinberg, *Germany, Hitler and World War II: Essays in Modern Germany and World History* (Cambridge, 1995), p. 287.
3. Although the image of nineteenth-century Germany had begun to shift a bit before August 1914, the sea change took place thereafter and since 1945 has been fairly uniformly grey, at least in the English cultural world. Fifty years past World War II has not erased the negative image of the 'Hun', German national character and Germany prior to August 1914. Peter E. Firchow, *The Death of the German Cousin: Variations on a Literary Stereotype: 1890–1920* (Lewisburg, 1986), *passim*.
4. These are the three great historiographical controversies which have erupted since the end of World War II. Each one paints nineteenth-century Germany in dark, twentieth-century colours. The first and third confront the Prussian–German Army directly, describing it in militaristic terms. All three describe various attempts to attach the Third Reich, and especially the Holocaust, to German history before 1933, and especially before 1914. The Fischer controversy was touched off by the publication of Fritz Fischer's book, *Griff nach der Weltmacht* (Düsseldorf, 1961), translated as *Germany's Aims in the First World War* (New York, 1967), in which he argued that Nazi foreign policy was a continuation of German foreign policy in 1914–18. See John Moses, *The Politics of Illusion: the Fischer Controversy in German Historiography* (London, 1975); the Sonderweg controversy is best seen in the work of Geoff Eley. It deals with the question of whether German industrialization was unique or whether the process was comparable to what happened in England or France. See for example his recent edited work, *Society, Culture, and the State in Germany, 1870–1930* (Ann Arbor, 1996), especially 'Introduction 1: Is There a History of the Kaiserreich?'; the Goldhagen issue arose out of Daniel Goldhagen's *Hitler's Willing Executioners* (New York, 1996), Goldhagen argues that eliminationist anti-Semitism existed in nineteenth-century Germany long before Nazi Germany. It is best followed in a number of articles. Gordon Craig, 'How

- Hell Worked', *NY Review of Books*, 18 April 1996, pp. 4–8; Volker Berghahn, 'The Road to Extermination', *NY Times Book Review*, 14 April 1996; Istvan Deak, 'Holocaust Views: the Goldhagen Controversy in Retrospect', *Central European History (CEH)*, Vol. 30, No. 2 (1997), pp. 295–307; Hans Ulrich Wehler, 'The Goldhagen Controversy: Agonizing Problems, Scholarly Failure and the Political Dimension', *German History*, Vol. 15, No.1 (1997), pp. 80–91; Josef Jaffe, 'Goldhagen in Germany', *NY Review of Books*, 28 November 1996; Ruth Bettina Birn, 'Historiographical Review: Revising the Holocaust', *The Historical Journal*, Vol. 40, No. 1(1997), pp. 195–215.
5. Jean Quataert, 'Introduction 2: Writing the History of Women and Gender in Imperial Germany', p. 49, and Elizabeth Domansky, 'Militarization and Reproduction in World War I Germany', pp. 427–64 in Eley, *Society, Culture and the State 1870–1930*; Fritz Stern, *Einstein's German World* (Princeton, 1999), p. 277.
 6. Cf. Correlli Barnett, *Essays on Leadership and War* (1992), Introduction by John Terraine; Geoff Eley, 'Theory and Kaiserreich: Problems with Culture: German History after the Linguistic Turn', *CEH*, Vol. 31, No. 3 (1998), pp. 197–227. Barbara Tuchman wrote that the trap built into all history was the 'disproportionate survival of the negative'. Because what catches people's eye at the time, what is mainly written down, is the bad, the crimes, crises and disasters. Bad news sells newspapers, p. x, Jack Dukes and Joachim Remak (eds), *Another Germany: a Reconsideration of the Imperial Era* (Boulder, 1988).
 7. Kenneth Barkin, 'W. E. B. Du Bois and the Kaiserreich', *CEH*, Vol. 31, No. 3 (1998), pp. 158, 162.
 8. Firchow, *The Death of the German Cousin*, pp. 30–1.
 9. Arden Bucholz, *Moltke, Schlieffen and Prussian War Planning* (Oxford, 1991). Introduction. Hereinafter *Prussian War Planning*.
 10. Performance to price ratios of central processing units (CPUs) for information technology currently doubles every 18 months.
 11. 'Defense Technology: the Information Advantage', *The Economist*, 10 June 1995, p. 6. Merrill A. McPeak, 'The Key to Modern Airpower', *AIR FORCE Magazine*, September 1993, pp. 43–6; Larry D. Welch, 'Dominating the Battlefield (Battlespace)', *Journal of Electronic Defense*, January 1997 Supplement, pp. 12–14. (Kindness of Sandra Higel, Reference Librarian, USAF Academy, Colorado Springs, Colo.)
 12. *Ibid.*, p. 8; Robert H. Scales, 'Cycles of War', *Armed Forces Journal*, July 1997, pp. 38–42; US Department of the Army, *Force XXI Operations*, TRADOC Pamphlet 525–5 (TRADOC, 1994); Dennis Reimer, *Knowledge and Speed: the Annual Report of the Army after Next Project* (Washington, 1997).
 13. Arden Bucholz, 'Delbrück: the Artist of War and Politics' in *Zum 150. Geburtstag von Hans Delbrück* (1999); *idem*, *Delbrück's Modern Military History* (Lincoln and London, 1997), hereinafter *Delbrück's Modern History*; *idem*, *Hans Delbrück and the German Military Establishment* (Iowa City, 1985); 'Modern' as a term has been heavily criticized in the past two decades. However, no one has come up with a better way to describe what has happened to many parts of the world in the past 200 years than by using the continuum 'traditional–modern'. It is used here with full awareness of its limitations.

14. Bucholz, *Prussian War Planning*, p. 92.
15. Cf. Michael Crichton, *Jurassic Park* (New York, 1990), pp. 75–7 for interesting correlations.
16. Bucholz, *Prussian War Planning*, p. 2.
17. *Ibid.*, pp. 3–4; Moltke says this in almost the same words at the start of his ‘Instructions for Large Group Commanders’ of June 1869. Daniel Hughes, *Moltke on the Art of War* (Novato, Calif., 1993), p. 172.
18. This is the principle of *Wu-wei* or non-action. Herlee Creel, *What is Taoism?* (Chicago, 1970), pp. 51–71; Wang Pi, *Commentary on Lao Tzu* (Honolulu, 1979), p. 1018; Lin Yutang, *The Wisdom of Laotze* (New York, 1948), pp. 265, 293.
19. Atul Gawande, ‘When Doctors Make Mistakes’, *The New Yorker*, 1 Feb. 1999, p. 51.
20. France and England suffered similar casualty rates in the Great War. Cf. Jean-Jacques Becker, *The Great War and the French People* (Oxford, 1985), pp. 5–6. French dead were 1 327 000, English 715 000 and German 2 037 000. To make any sense of these one must consider them in relationship to total population size, and also to examine when they died.
21. Gordon Craig, *The Battle of Koeniggratz* (Philadelphia, 1964); Michael Howard, *The Franco-Prussian War* (New York, 1961). To complement Craig we have the excellent recent study by Geoffrey Wawro, *The Austro-Prussian War: Austria’s War with Prussia and Italy in 1866* (New York, 1996).
22. John Kenneth Galbraith, *The New Industrial State* (2nd edn, London, 1972), Ch. 2; Bucholz, *Prussian War Planning*, introduction.
23. Bucholz, *Prussian War Planning*, introduction.
24. *Ibid.*
25. *Ibid.*
26. Arthur L. Stinchcombe, *Information and Organizations* (Berkeley, 1990), pp. 2–6.
27. *Ibid.*, p. 21.
28. Eberhard Kessel, *Moltke* (Stuttgart, 1957), p. 507.
29. Mark Dodgson, ‘Organizational Learning: a Review of Some Literatures’, *Organizational Studies*, Vol. 14, No. 3 (1993), pp. 377–80; Dodgson, ‘Technology Learning, Technology Strategy and Competitive Pressures’, *British Journal of Management*, Vol. 2 (1991), pp. 133–9; a fine case study of these ideas is Dodgson, *The Management of Technological Learning: Lessons from a Biotechnology Company* (Berlin, 1991). A minor classic describing organizations is Mary Douglas, *How Institutions Think* (London, 1986). A more formal statement, full of ideas, is Charles Perrow, *Complex Organizations: a Critical Essay* (New York, 1986).
30. Dodgson, ‘Organizational Learning’, pp. 380–2.
31. Gordon Craig, *Theodor Fontane: Literature and History in the Bismarck Reich* (New York, 1999); Peter Gay, ‘Foreword’ to *Theodor Fontane, Short Novels and Other Writings*, edited by Peter Demetz (New York, 1982), p. vii.
32. Peter Demetz, ‘Introduction’ to *Fontane, Short Novels and Other Writings*, p. xv.
33. This work draws heavily on Eberhard Kessel’s fine biography of Moltke. Part of the uniqueness of his work, and also those of Bigge and Jaehns – Wilhelm Bigge, *Feldmarschall Graf Moltke: Ein militaerisches Lebensbild* (2 vols, 1901);

- and Max Jaehns, *Feldmarschall Moltke* (2 vols, Berlin, 1900) – is that they researched and took careful notes in the General Staff War Archives before 1945. That archive received a direct air strike in spring 1945 and a good deal of it was destroyed. Much of the rest was carted off by Soviet troops to remain unused in various warehouses in Moscow. Ten years ago 45 tons of this material was returned to Berlin. Holger Afflerbach, *Falkenhayn: Politisches Denken und Handeln im Kaiserreich* (Munich, 1994), used this material and so did Annika Mombauer, 'A Reluctant Military Leader? Helmuth von Moltke and the July Crisis of 1914', *War in History*, Vol. 6, No. 4 (1999), pp. 417–46. It is curious that there has been no serious scholarly biography of Moltke in almost half a century and there is still nothing in English.
34. Arden Bucholz, 'Militarism' in *Encyclopedia of Violence, Peace and Conflict*, 3 vols, 1999, Vol. II, pp. 423–32.
 35. Peter F. Drucker, *Managing in a Time of Great Change* (New York, 1995), p. 91.

1 NAPOLEON'S LEGACY AND THE PRUSSIAN INVENTION

1. Jürgen Habermas, 'Modernity – an Incomplete Project' in Hal Foster (ed.), *The Anti-Aesthetic: Essays on Postmodern Culture* (Seattle, 1992), p. 5.
2. Paul Virilio, *Speed and Politics* (New York, 1997); *idem*, *Popular Defense and Ecological Struggles* (New York, 1983); Giles Deleuze and Felix Guattari, *Nomadology: the War Machine* (New York, 1989); Paul Virilio and Sylvère Lotringer, *Pure War* (New York, 1983).
3. H. Stuart Hughes, *Consciousness and Society* (New York, 1958), p. 123.
4. *Ibid.*, pp. 121–2. G. J. Whitrow, *Time in History* (1988), p. 173.
5. Rinehard Koselleck, *Futures Past: On the Semantics of Historical Time* (Cambridge, Mass., 1983), pp. xxiii–xxiv. A very close paraphrase from Jürgen Habermas, 'Modernity – an Incomplete Project', p. 5.
6. R. R. Palmer and Joel Colton, *A History of the Modern World* (8th edn, New York, 1998), pp. 391–419; J. Black, *European Warfare, 1660–1815* (London, 1994), pp. 168–75.
7. Arden Bucholz, *Hans Delbrück and the German Military Establishment* (Iowa City, 1985), pp. 9–15, 34–6.
8. Archer Jones, *The Art of War* (New York, 1987), p. 314.
9. *Ibid.*
10. *Ibid.*, pp. 314–17.
11. *Ibid.*, p. 325.
12. A. H. Robinson et al., *Elements of Cartography* (5th edn, New York, 1984), p. 368; Bucholz, *Prussian War Planning*, Ch. 2.
13. Robinson, *Elements of Cartography*, pp. 29–30.
14. Josef Konvitz, *Cartography in France, 1660–1848* (Chicago, 1987), p. 39.
15. *Ibid.*, pp. 19–21.
16. *Ibid.*, p. 61.
17. W. H. Bruford, *Germany in the Eighteenth Century: the Social Background of the Literary Revival* (Cambridge, 1965), p. 41; W. O. Henderson, *The Industrial Revolution in Europe* (Chicago, 1961), pp. 9–15.

18. Bucholz, *Prussian War Planning*, pp. 18–19; Black, *European Warfare*, pp. 193–9.
19. Jones, *Art of War*, pp. 371–7; Black, *European Warfare*, pp. 168–75.
20. Bucholz, *Prussian War Planning*, Ch. 1; for a contemporary restatement of Massenbach, cf. Kees van der Heijden, *Scenarios: the Art of Strategic Conversation* (New York, 1996).
21. Gabriel Motzkin, 'On Koselleck's Concept of Time in History' in Hartmut Lehmann and Melvin Richter (eds), *The Meaning of Historical Terms and Concepts* (Washington, DC, 1996), pp. 41–3.
22. Bucholz, *Prussian War Planning*, Ch. 1.
23. *Ibid.*, pp. 25ff.
24. *Ibid.*, pp. 22–4.
25. E. S. Mittler, Berlin, was the General Staff publisher from 1816 to 1919.
26. The *Militär-Wochenblatt* included a lot more than history, but military history was one of its staples. Some would call this the house organ of the army because it included promotions, retirements, new appointments and official announcements of all kinds.
27. Bucholz, *Prussian War Planning*, pp. 23–4.
28. *Ibid.*, pp. 20–2.
29. *Ibid.*, p. 31.
30. Thomas B. Allen, *War Games* (London, Heinemann, 1987), p. 160.
31. Hajo Holborn, *A History of Modern Germany, 1648–1840* (New York, Alfred Knopf, 1971), pp. 473ff.
32. Walter von Lossow, 'Mission-Type Tactics versus Order-Type Tactics', *Military Review*, Vol. 57 (June 1977), p. 87; Christian O. E. Millotat, *Understanding the Prussian–German General Staff* (Carlisle, Penn., Strategic Studies Institute, US Army War College, 1992), pp. 23–4; Wolfgang Schall, 'Fuehrungsgrundsätze in Armee und Industrie', *Wehrkunde*, Vol. 14, No. 5 (1964), pp. 10–18.
33. This is, of course, arguable. First in the world implies some sort of informal standard in which the educational systems of all other countries are also rated and compared. Of course this rarely or never happens in reality. In the nineteenth century Great Power world, there were few players. China, for example, whose education system a century before this might have been considered very strong, was in a period of deepening decline. And of course this was education for a very small percentage of its population. British education itself was considered very good, at least for the small elite. In the nineteenth century, this role model resided in Europe; perhaps Germany, France and England shared dominance. And I would argue that Germany may have held a slight edge. But the point here is that Prussian military education – for certain kinds of persons – may have been a cut above civilian education.
34. Bernard Poten, *Militär-Erziehungs- und Bildungswesens in den Landen deutsche Zunge* (4 vols, Berlin, A. Hofmann, 1896), Vol. IV, p. 499.
35. Hubert von Boehn, *Generalstabsgeschäfte* (Potsdam, 1875), pp. 75ff.
36. Freiherr Ferdinand von Ladebur, *Die Geschichte des deutschen Unteroffiziers* (Berlin: Junker und Duennhaupt Verlag, 1939), p. 228; Henderson, *Industrial Revolution in Europe*, p. 20.
37. Ladebur, *Deutschen Unteroffiziers*, p. 225.

38. *Ibid.*, pp. 249ff.
39. Bucholz, *Prussian War Planning*, pp. 60ff.
40. Jones, *Art of War*, p. 393.
41. *Ibid.*
42. Wilfried Feldenkirchen, *Werner von Siemens: Inventor and International Entrepreneur* (Columbus, Ohio State University, 1994), pp. 32–3.
43. Henderson, *Industrial Revolution in Europe*, p. 20.
44. Wawro, *Austro-Prussian War*, p. 11.
45. Edward Hagerman, *The American Civil War and the Origins of Modern Warfare* (Bloomington, Ind., Indiana University Press, 1988), pp. 33–5.
46. *Ibid.*, p. 37.
47. Craig, *Koeniggratz*, p. 18.
48. *Ibid.*, p. 21; Wawro, *Austro-Prussian War*, p. 21.
49. Craig, *Koeniggratz*, p. 21.
50. Friedrich Engels in 'The History of the Rifle', *Volunteer Journal for Lancashire and Cheshire*, 3 November 1860 and 5 June, 1861 reprinted in Bernard Semmel, *Marxism and the Science of War* (New York, 1981), pp. 126–37; *Engels as Military Critic*, ed. W. H. Chaloner and W. O. Henderson (Westport, 1976).
51. Peter Drucker, *Managing in a Time of Great Change* (New York, 1995), p. 91.

2 HELMUTH VON MOLTKE, 1800–57

1. The famous conclusion of Queen Louise of Prussia.
2. Kessel, *Moltke*, pp. 11–13. Curiously enough, near the end of his life, when asked which books had influenced him the most, both Homer and the Bible made the short list. Does this suggest to us that Moltke's mind worked over and over a few big ideas and works, plumbing them to depths that others missed?
3. Doris Asmundsson, *Georg Brandes: Aristocratic Radical* (New York, 1981), p. 7; Elias Bredsdorff, *Hans Christian Andersen* (New York, 1975), *passim*.
4. R. R. Palmer and J. Colton, *A History of the Modern World* (8th edn, New York, 1995), p. 422.
5. Monica Stirling, *The Wild Swan: the Life and Times of Hans Christian Andersen* (New York, 1965), p. 265 and *passim*; Bucholz, *Prussian War Planning*, pp. 218ff. We may note that it was from this family that Helmuth von Moltke the younger – Moltke's nephew and long-time personal adjutant who was chief of the GGS from 1906 to 1914 – got his wife Countess 'Lizzy', who was a member of a wealthy and interesting group of Berlin women just prior to the outbreak of World War I.
6. One of Hagermann-Lindenchrone's sons would face Moltke in 1864 as commander of a Danish cavalry division. A. Gallenga, *The Invasion of Denmark in 1864* (2 vols, London, 1864), Vol. II, p. 203.
7. Kessel, *Moltke*, p. 15.
8. Cf. the letter of one of the sons of the house when Moltke lived there, 'Erinnerungen des Generalleutnants v. Hegermann-Lindenchrone' in GGS, *Moltkes Gesammelte Schriften*, Vol. V, pp. 241–51. The general, six years

- younger than Moltke, commanded a Danish cavalry division and then all the forces in Jutland in the Danish War of 1864.
9. Friedrich August Dressler, *Moltke in Seiner Hauslichkeit* (2nd edn, Berlin, 1904), p. 78.
 10. Kessel, *Moltke*, p. 19.
 11. Stirling, *The Wild Swan*, p. 207.
 12. Bucholz, *Prussian War Planning*, p. 3.
 13. Showalter, *Frederick the Great*, p. 351, Peter Paret, *Yorck and the Era of Prussian Reform* (Princeton, 1966), pp. 28ff, 210–14; John A. English, *On Infantry* (New York, 1967), pp. 1–4.
 14. Kessel, *Moltke*, p. 21.
 15. *Ibid.*, p. 20.
 16. Bucholz, *Prussian War Planning*, p. 29.
 17. *Ibid.*, p. 31; Kessel, *Moltke*, pp. 25–30.
 18. Kessel, *Moltke*, p. 32.
 19. *Ibid.*, pp. 34, 40; Bucholz, *Prussian War Planning*, pp. 22–32, 45, 51.
 20. Dressler, *Moltke in Seiner Hauslichkeit*, written by his personal musician.
 21. Kessel, *Moltke*, p. 49.
 22. *Websters New International Dictionary*, 1934, pp. 986, 600.
 23. Mark Dodgson, 'Technology Learning, Technology Strategy and Competitive Pressure', *British Journal of Management Technology Learning*, Vol. 2 (1991), p. 141.
 24. Mark Dodgson, 'Organizational Learning: a Review of Some Literatures', *Organizational Studies*, Vol. 14, No. 3 (1993), pp. 375–94.
 25. *Ibid.*, p. 389.
 26. *Ibid.*, p. 383.
 27. Kessel, *Moltke*, pp. 53–65.
 28. Kameke letter, GGS, *Moltkes Gesammelte Schriften*, Vol. VI, pp. 254–5.
 29. Bucholz, *Prussian War Planning*, p. 25; Eugene Ferguson, *Engineering and the Mind's Eye* (Cambridge, Mass., 1992), *passim*.
 30. Cf. reminiscences of a 17-year-old daughter of the Kospoth house during the time Moltke was with them. She emphasized the simplicity of the household: the privations of the Napoleonic War years were not forgotten, 'Erinnerungen der Frau Louise v Schimpff' in GGS, *Moltkes Gesammelte Schriften*, Vol. V, pp. 251–3.
 31. Kessel, *Moltke*, p. 65.
 32. One of them is German Ordnance Survey Map No. 4870 for Gross Zoellnitz. Bucholz, *Prussian War Planning*, p. 33.
 33. Kessel, *Moltke*, p. 101.
 34. Bucholz, *Prussian War Planning*, pp. 28–31.
 35. The *Militär-Wochenblatt* was the weekly house organ of the Prussian Army, edited and published by the General Staff. Cf. Max Jaehns, 'Das militair-Wochenblatt von 1816 bis 1876' in Max Jaehns, *Militaergeschichtliche Aufsätze*, edited by Ursula von Gersdorff (Osnabrück, Biblio Verlag, 1970).
 36. Bucholz, *Prussian War Planning*, p. 30.
 37. *Ibid.*, pp. 14–15.
 38. Letter to his mother of February 1831, cited in Rudolf Peschke, *Moltkes Stellung zur Politik bis zum Jahre 1857* (Kirchhain, 1912), p. 7.

39. Kessel, *Moltke*, p. 90.
40. *Ibid.*, pp. 92–5.
41. Kessel, *Moltke*, pp. 96–100.
42. Showalter, *The Wars of Frederick the Great*, pp. 305–6.
43. *Ibid.*, p. 279; Kessel, *Moltke*, p. 104.
44. Kessel, *Moltke*, p. 110.
45. *Ibid.*, pp. 113–14.
46. Bernard Lewis, *The Emergence of Modern Turkey* (London, 1961), pp. 75–103; Erich Zürcher, *Turkey: a Modern History* (London, 1994), pp. 32–53. Stanford and Ezel Shaw, *A History of the Ottoman Empire and Modern Turkey* (3 vols, Cambridge, 1977), Vol. II, pp. 135–9.
47. Kessel, *Moltke*, p. 118.
48. *Ibid.*, pp. 124–5.
49. *Ibid.*, p. 126.
50. *Ibid.*, pp. 127–31.
51. *Ibid.*, pp. 127–33.
52. *Ibid.*, p. 133.
53. *Ibid.*, pp. 133–7.
54. *Ibid.*, pp. 140–1. Kessel also wrote about Moltke's experiences at Nezib, using General Staff documents, Moltke's reports to General Staff chief Krauseneck and to Prussian Ambassador Koenigsmark in Constantinople, and letters written by Moltke's colleagues, Fischer, Mühlbach, Vinke and Loew, dealing with these same events, and also reproducing Moltke's field topographical sketches of the terrain and troop placement. *Moltkes erster Feldzug* (Berlin, 1939).
55. Kessel, *Moltke*, pp. 142–5.
56. *Ibid.*, pp. 142–6.
57. *Ibid.*, pp. 141–7.
58. *Ibid.*, p. 147.
59. Moltke's letters of 1 May and 12 July 1839, say it all as quoted in Kessel, *Helmuth von Moltke Briefe* (2nd edn, Stuttgart, 1960), pp. 129–54; as quoted in Max Horst, *Moltke, Leben und Werk in Selbstzeugnissen* (Leipzig, 1930), pp. 66–86. The most recent edition of his letters from Turkey is Helmuth Arndt (ed.), *Helmuth von Moltke. Unter dem Halbmond. Erlebnisse in der alten Türkei, 1835–1839* (Berlin, 1988), for Nezib, pp. 156–75.
60. Kessel, *Moltke*, p. 150.
61. Rudolf Peschke, 'Moltke als Mitarbeiter der Augsburger Allgemeinen Zeitung' in *Moltkes Stellung zur Politik bis zum Jahre 1857* (Kirchheim, 1912), pp. 39–45, a review of a dozen articles Moltke published on diverse topics between 1841 and 1844, in the Augsburg newspaper.
62. For Moltke's contributions to German understanding of ancient world topography see Christian Belger, 'Generalfeldmarschall Graf Moltkes Verdienste um die Kenntniss des Alterthums', *Preussische Jahrbücher*, Vol. 51, No. 1 (1883), pp. 70–114.
63. Kessel, *Moltke*, p. 155.
64. James M. Brophy, *Capitalism, Politics and Railroads in Prussia, 1830–1870* (Columbus, 1998), pp. 30–3.
65. Kessel, *Moltke*, p. 167.

66. Rahne, *Mobilmachung*, p. 23.
67. I came to the same conclusions but was comforted to find that Max Horst in *Moltke*, p. xxvii, agreed.
68. Hannah Pakula, *An Uncommon Woman: the Empress Frederick* (New York, 1995), p. 60.
69. Kessel, *Moltke*, p. 175.
70. Horst, *Moltke*, Introduction, p. xxvii.
71. Friederika von Brockdorff, *Marie von Moltke: Ein Lebens- und charakterbild* (Leipzig, 1893), p. 48. Auguste, Moltke's closest sibling, described her step-daughter in 'Marie Moltke', GGS, *Moltkes Gesammelte Schriften*, Vol. V, pp. 29–35. Moltke's mother also knew Marie and wrote to her son about her. 'Marie Moltke' in GGS, *Moltkes Gesammelte Schriften*, Vol. I, pp. 145–58.
72. Brockdorff, *Marie von Moltke*, p. 98.
73. Kessel, *Moltke*, p. 157; Jaehns, *Feldmarschall Moltke*, Vol. I, p. 132.
74. Kessel, *Moltke*, pp. 179–80.
75. *Ibid.*, p. 182.
76. Belger, 'Generalfeldmarshall Graf Moltkes Verdienste', details Moltke's contributions both as cartographer and as terrain describer.
77. Kessel, *Moltke*, p. 185.
78. Moltke's travel writings in fact became famous. In 1879 George von Bunsen, famed natural scientist, published a special edition called *Moltkes Wanderbuch*. Kessel, *Moltke*, p. 769; Marie von Bunsen, *George von Bunsen* (Berlin, 1900), p. 281; Holborn, *Modern Germany*, Vol. II, pp. 528–9.
79. Kessel, *Moltke*, p. 191.
80. Bigge, *Moltke*, Vol. I, pp. 292–5. Articles were published in the *Militär-Wochenblatt* in April 1848, July and November 1852 and February 1854. The General Staff published *Geschichte des Krieges gegen Daenemark, 1848–1849* as Vol. VIII, *Moltkes Militaerische Werke* (Vol. III, 1893).
81. Cf. the letter of one of his fellow staff officers, H. A. v. Glisczinski, who had been in Moltke's War School class, and was later chief of staff to the Guard Corps during the mobilization of 1850. Glisczinski says that Moltke never changed: his identity was consistent. Even in Berlin during the 1860s, when his wife would stay with the Moltkes, and they played whist from 6 to 8 in the evenings, nothing changed. GGS, *Moltkes Gesammelte Schriften*, Vol. V, *Briefe*, pp. 258–61.
82. Hubert von Boehn, *Generalstabsgeschaeft* (Potsdam, 1875), pp. 108–9.
83. Kessel, *Moltke*, pp. 195–206.
84. *Ibid.*, p. 200.
85. *Ibid.*, p. 195.
86. Jaehns, *Moltke*, Vol. I, p. 189.
87. Bigge, *Feldmarschall Moltke*, Vol. I, pp. 313–14.
88. Craig, *Politics of the Prussian Army*, p. 130.
89. Kurt Jany, *Geschichte der Preussischen Armee von 15. Jahrhundert bis 1914* (2nd edn, 4 vols, Osnabrück, 1967), Vol. IV, pp. 187–9.
90. Hermann Rahne, *Mobilmachung: Militaerische Mobilmachungsplanung und-technik in Preussen und im Deutschen Reich von Mitte des 19. Jahrhunderts bis zum zweiten Weltkrieg* (Berlin, 1983), p. 16.
91. *Ibid.*, p. 15.

92. Bigge, *Feldmarschall Moltke*, Vol. I, p. 312.
93. *Ibid.*, Vol. I, p. 316.
94. GGS, *Moltkes Gesammelte Schriften*, Vol. I, p. 156.
95. *Ibid.*, Vol. V, p. 261.
96. He wrote to his brother that for 24 weeks the entire IV Corps had been mobilized in the field and out of its garrisons. If only Frederick the Great had had such a corps! Millions of thalers for a pointless demonstration. Horst, *Moltke*, p. 184.
97. Cf. Moltke's comments, in *Moltkes Gesammelte Schriften*, Vol. V, pp. 261–4.
98. Kessel, *Moltke*, pp. 313–15.
99. *Ibid.*, p. 211.
100. *Ibid.*, p. 214.
101. *Ibid.*
102. Bucholz, *Delbrück's Modern Military History*, p. 71.
103. Horst, *Moltke*, pp. 189–93; Kessel, in *Moltkes Briefe*, chose the same letter.
104. Kessel, *Moltkes Briefe*, pp. 271–313, long letters to his wife describing in detail the places and people he met while on official duty as first adjutant to the Crown Prince of Prussia.
105. *Ibid.*, pp. 214–16.
106. *Ibid.*, p. 221.
107. *Ibid.*
108. *Ibid.*, p. 223.
109. Dressler, *Moltke in Seiner Hauslichkeit*, p. 114.
110. Kessel, *Moltke*, p. 222.

3 MOLTKE AND PRUSSIAN SYSTEM, 1857–63

1. Kessel, *Moltke*, pp. 227ff; Reyher's monthly salary had been 6000 thalers as chief of the General Staff and general of cavalry, plus living quarters on the top floor of the General Staff building, with a staff to run it. His wife was asked to move out, with her children and 500 a month. The administration made a deal: she would move out, but with a pension of 1100. Beginning officers in the Prussian Army of that day earned roughly 25 thalers a month. Kessel, *Moltkes Briefe*, pp. 316–18.
2. Bucholz, *Prussian War Planning*, pp. 128ff.
3. Kessel, *Moltke*, p. 228.
4. Brockdorff, *Marie von Moltke*, p. 48.
5. Helmuth had specifically asked her to write to him in English. They used English at home. His English improved momentarily from the days in the 1830s when he translated Edward Gibbon's *Decline and Fall of the Roman Empire* from English into German, but her German probably did not approach court standards. A number of Prussian royal family and high nobles had English wives, including Crown Prince Frederick, Albrecht von Roon and Albrecht von Blumenthal. But the language at court was German, mixed perhaps with French.
6. An example of someone with both lineage and money is Mary Lee Waldersee. Although a wealthy New Yorker, she was related to the

- Hohenzollerns by marriage. The combination of being on the court order of presentation, lots of money and a lively personality, combined with the fact that her second husband, Waldersee, was a Hohenzollern relative by blood, meant Mary Lee had lots of access that Marie Burt did not.
7. Brockdorff, *Marie von Moltke*, p. 110.
 8. *Ibid.*, p. 123.
 9. Kessel, *Moltke*, p. 230.
 10. *Ibid.*, p. 231.
 11. Moltke was initially appointed 'acting' chief. It was almost a year later, 18 September 1858, that he became chief. In 1857 he was a general major and only became general lieutenant in 1859, the year after he became chief. Each of these designations and ranks had remunerative as well as command and staff implications. Jaehns, *Moltke*, Vol. II, p. 276.
 12. *Ibid.*
 13. Craig, *Politics*, p. 193.
 14. Kessel, *Moltke*, pp. 232–3.
 15. *Ibid.*, pp. 233–4.
 16. Julius von Verdy du Vernois, *With the Royal Headquarters, 1870–71* (London, 1897); Paul Bronsart von Schellendorff, *The Duties of the General Staff* (4th edn, London, 1905).
 17. Count Albrecht von Blumenthal (ed.), *Journals of Field-Marshal Count von Blumenthal for 1866 and 1870–71* (London, 1903), pp. 57–9.
 18. Kessel, *Moltke*, pp. 232–64.
 19. Owen Connelly, *Blundering to Glory: Napoleon's Military Campaigns* (Wilmington, 1987), pp. 7–9 and *passim*; cf. Black, *European Warfare*, pp. 182–99; Alan Schom, *Napoleon Bonaparte* (New York, 1997), *passim*.
 20. Kees van der Heijden, *Scenarios: the Art of Strategic Conversation* (New York, 1996).
 21. Ron S. Dembo and Andrew Freeman, *Seeing Tomorrow* (Toronto, 1998) pp. 9–40.
 22. See below, Ch. 6, pp. 123–5.
 23. Hajo Holborn quotes approvingly Moltke's famous statement that no war plan can really go much beyond the first meeting with the enemy: after that everything was up for grabs; in Peter Paret, *Makers of Modern Strategy from Machiavelli to the Nuclear Age* (Princeton, 1986), p. 289; J. F. C. Fuller wrote that Moltke took his armies to the starting point and then let them go, abdicating command. Fuller, *A Military History of the Western World* (3 vols New York, 1954), Vol. 3, p. 134. Gunther Rothenburg, 'Moltke, Schlieffen and the Doctrine of Strategic Envelopment' in Paret, *Makers of Modern Strategy*, Ch. 11, is closer to the interpretation presented here.
 24. This volte-face probably explains some of the friction between Moltke and Bismarck which is supposed to have developed from time to time during these wars. If Bismarck got used to the Moltke in his type B role during peacetime, he had some adjusting to do in combat where Moltke emerged in his type A personality to fight a war.
 25. Walter von Lossow, 'Mission-Type Tactics versus Order-Type Tactics', *Military Review*, Vol. 57 (June 1977), pp. 87–91; Christian Millotat, *Understanding the Prussian–German General Staff System* (Carlisle, Pa, 1992),

- pp. 20–4; Wolfgang Schall, 'Führungsgrundsätze in Armee und Industrie', *Wehrkunde*, Vol. 14, No. 5 (1964), pp. 10–18; Franz Uhle-Wettler, 'Auftragstaktik: Mission Order and the German Experience,' in Richard D. Hooker, Jr, *Maneuver Warfare: an Anthology* (Novato, Calif., 1983), pp. 235–47.
26. Clayton R. Newell, *The Framework of Operational Warfare* (1991), pp. 168–73; Carl-Gero von Ilseman, 'Das operative Denken des Aelterer Moltke' in Horst Boog et al., *Operatives Denken und Handeln in deutschen Streitkraefften im. 19. und 20. Jahrhundert* (Bonn, 1988), pp. 17ff.
 27. Arthur T. Coumbe, 'Operational Command in the Franco-Prussian War' in *Parameters*, Vol. 21, No. 2 (summer 1991), pp. 92–3; Michael D. Krause, 'Moltke and the Origins of the Operational Level of War' in R. E. Foerster (ed.), *Generalfeldmarschall von Moltke: Bedeutung und Wirkung* (Munich, 1991).
 28. Newell, 'Operational Warfare', p. 169.
 29. Millotat, *Understanding the Prussian–German General Staff*, pp. 23–4. Cf. Schall, 'Führungsgrundsätze in Armee und Industrie', pp. 10–18.
 30. Prinzen Kraft zu Hohenlohe-Ingelfingen, *Aus meinen Leben: Aufzeichnungen* (3 vols, Berlin, 1906), Vol. III, p. 17.
 31. Max Horst, *Moltke: Leben und Werk in Selbstzeugnissen* (Leipzig, 1930), p. xiii.
 32. Bucholz, *Delbrück's Modern Military History*, p. 66.
 33. Kessel, *Helmuth von Moltke, Briefe, 1825–1891* (2nd edn, Stuttgart, 1960), introduction; pp. 5–6; Eberhard Kessel (ed.), *Moltke Gespraechen* (Hamburg, 1940), pp. 9–11.
 34. Kessel, *Moltke Gespraechen*, pp. 20–3.
 35. Kessel, *Moltke*, p. 235.
 36. *Ibid.*, p. 252.
 37. Theodore Ropp, *War in the Modern World* (New York, 1967), pp. 164ff.
 38. Jeremy Black, *War in the World: Military Power and the Fate of Continents* (New Haven, 1998), pp. 165–76.
 39. Larry Addington, *The Patterns of War since the Eighteenth Century* (Bloomington, Ind., 1984), p. 61.
 40. Wawro, *Austro-Prussian War*, p. 11.
 41. Addington, *Patterns of War*, p. 62.
 42. Kessel, *Moltke*, p. 244.
 43. Max Jaehns, 'Das Militaer-Wochenblatt von 1816 bis 1876' in *Max Jaehns, Militaer-geschichtliche Aufsätze*, ed. Ursula von Gersdorff (Osnabrück, 1970), pp. 301ff.
 44. *Ibid.*, p. 311.
 45. *Ibid.*, p. 312.
 46. Kessel, *Moltke*, p. 244.
 47. Jaehns, 'Das Militaer-Wochenblatt', p. 313.
 48. Daniel Hughes (ed.), *Moltke on the Art of War: Selected Writings* (Novato, Calif., 1993), pp. 171ff.
 49. General Guillaume Bonnal, 'Le Plan de Moltke pour 1870', in *Journal des Sciences Militaires*, July and August 1903, p. 7. From 28 November 1857 to 6 May 1870 Bonnal wrote, his preparatory ideas for a war against France were clear and thematic. Moltke's military correspondence, he went on, allows us to appreciate how much Moltke's immense labours contributed to the actual outcome of his wars, p. 6.

50. Kessel, *Moltke*, p. 282.
51. (Bavaria, Württemberg, Baden and Rhine Hesse.) Kessel, *Moltke*, p. 247.
52. The X Federal Corps was Hanover, Braunschweig, North and Eastern Small; the IX Federal Corps was Saxony, Kur Hesse and Nassau.
53. Kessel, *Moltke*, p. 245.
54. Bucholz, *Prussian War Planning*, p. 39.
55. Kessel, *Moltke*, p. 247.
56. *Ibid.*, p. 243.
57. Bucholz, *Prussian War Planning*, p. 40.
58. Kessel, *Moltke*, p. 252.
59. *Ibid.*, p. 264.
60. *Ibid.*, pp. 265–89.
61. *Ibid.*, p. 269.
62. *Ibid.*, p. 271.
63. *Ibid.*, p. 275.
64. Jaehns, *Moltke*, Vol. II, p. 297.
65. *Ibid.*
66. Horst, *Moltke, Leben und Werk*, p. 246, letter to his brother Adolf dated July 1859.
67. Kessel, *Moltke*, p. 277.
68. ‘First General Staff officer’, also known as the ‘chief of staff’ to corps and divisional commanders.
69. Wawro, *Austro-Prussian War*, p. 34.
70. Kessel, *Moltke*, p. 281.
71. R. A. Doughty et al., *American Military History and the Evolution of Western Warfare* (Lexington, Mass., 1996), p. 126; cf. Michael D. Krause, ‘Moltke and Grant: a Comparison of Their Operational Thinking and Perspective’, in Foerster (ed.), *Generalfeldmarschall von Moltke: Bedeutung und Wirken*.
72. Kessel, *Moltke*, p. 286.
73. Bucholz, *Prussian War Planning*, p. 40.
74. *Ibid.*, p. 41.
75. Kessel, *Moltke*, p. 295.
76. *Ibid.*, pp. 295–302.
77. Pakula, *An Uncommon Woman*, p. 135; Craig, *Politics*, pp. 142–4; Kessel, *Moltke*, p. 349; *Denkwürdigkeiten aus dem Leben des General-Feldmarschalls Kriegsministers Grafen von Roon* (3rd edn, 3 vols, 1892); Reinhard Hübner, *Albrecht von Roon* (Hamburg, 1933).
78. Jaehns, *Moltke*, Vol. II, pp. 309–11.
79. *Ibid.*, pp. 311–12.
80. *Ibid.*, p. 313.
81. *Ibid.*, pp. 315–16.
82. Kessel, *Moltke*, p. 292.
83. *Ibid.*, p. 293.
84. *Ibid.*, p. 308; Bucholz, *Prussian War Planning*, p. 42.
85. Kessel, *Moltke*, p. 309.
86. *Ibid.*, p. 315.
87. Horst, *Moltke, Leben und Werk*, pp. 254–5.
88. Jay Luvaas, *The Military Legacy of the Civil War* (Chicago, 1959), p. 52.
89. Erich Eyck, *Bismarck and the German Empire* (New York, 1964), p. 166.

90. Luvass, *Military Legacy*, p. 124.
91. *Ibid.*, p. 60.
92. Russell B. Nye, *George Bancroft: Brahmin Rebel* (New York, 1944), p. 278; Lilian Handlin, *George Bancroft: the Intellectual as Democrat* (New York, 1984), pp. 292–5; *The Life and Letters of George Bancroft*, edited by M. A. D. Howe (2 vols, 1971), Vol. II, pp. 174ff.
93. Examples are 'Der Feldzug 1862 in Nord-America', *Preussische Jahrbuecher*, Vol. 10, No. 4 (1863), pp. 362–86; 'Der Feldzug 1863 in Nord-America', *Preussische Jahrbuecher*, Vol. 12, No. 3 (1863), pp. 480–506; 'Der Krieg in Nordamerika', *Die Grenzboten*, Vol. 23, No. 4 (1964), pp. 325–34; Heinrich Kortheber sums up a great deal of what Germans knew about the American Civil War in his essay, 'Ein merkwürdiger Krieg: der amerikanische Bürgerkrieg in zeitgenössischer deutscher Perspektive', paper given at the German Historical Institute Conference, Washington, DC in April 1994. Otto Graf zu Stollberg-Wernigerode, *Deutschland und die Vereinigten Staaten von America in Zeitalter Bismarcks* (Berlin, 1933); Ralph Lutz, *Die Beziehungen zwischen Deutschland und den Vereinigten Staaten während des Sezessionskriegs* (Heidelberg, 1911).
94. Edward Hagerman, *The American Civil War and the Origins of Modern Warfare* (Bloomington, Ind., 1988), pp. xii–xiii and *passim*.
95. Roger Pickenpaugh, *Rescue By Rail: Troop Transfer and the Civil War in the West* (Lincoln and London, 1998), *passim*.
96. Kessel, *Moltke*, p. 321. Did Moltke image the German topography as Grant the American? In both cases the rivers run north and south, the railroads mainly east and west.
97. Dennis Showalter, *Railroads and Rifles: Soldiers, Technology and the Unification of Germany* (Hamden, Conn., 1975), pp. 44–8; Jaehns, *Moltke*, Vol. II, pp. 305ff.
98. Lothar Gall, *Bismarck: The White Revolutionary* (2 vols, London, 1986), Vol. I, p. 155.
99. *Ibid.*
100. *Ibid.*, p. 158.
101. *Ibid.*, p. 159.
102. *Ibid.*, p. 169.
103. Edward Crankshaw, *Bismarck* (London, 1983), p. 114.
104. Gall, *Bismarck*, Vol. I, pp. 171–7.
105. David Blackbourn, *The Long Nineteenth Century: a History of Germany, 1780–1918* (New York, 1998), p. 242.
106. Kessel, *Moltke*, p. 322.
107. *Ibid.*, pp. 325–6; Jaehns, *Feldmarschall Moltke*, Vol. II, pp. 325–7.
108. Kessel, *Moltke*, p. 334.
109. Blackbourn, *The Long Nineteenth Century*, p. 242.

4 THE DANISH WAR, 1864

1. Kessel, *Moltke*, p. 359.
2. Both Gordon Craig's *Politics*, Ch. 5, and Gerhard Ritter's *Sword and Sceptor* (1954), Vol. I, Ch. 8, make much of the tension between political and

- military goals and methods; none of Bismarck's biographers comments on Bismarck's assessment and evaluation of the instrument he chose to accomplish his political goals. For example, Emil Ludwig, *Bismarck: the Story of a Fighter* (1927); Erich Eyck, *Bismarck and the German Empire* (New York, 1964); Werner Richter, *Bismarck* (1965); Otto Pflanze, *Bismarck and the Development of Germany* (3 vols, 1963–90); Crankshaw, *Bismarck*; Gall, *Bismarck*.
3. Hans-Joachim Schoeps, *Bismarck über Zeitgenossen, Zeitgenossen über Bismarck* (Frankfurt, 1972), p. 128.
 4. Nye, *George Bancroft: Brahmin Rebel*, p. 253.
 5. Max Holzinger says that Moltke's writings on the Danish War are substantial. Holzinger, a Badisch first lieutenant probably assigned to the GGS at the time, presumably used these writings in his lecture presentation to the Military Society in Berlin on 1 December 1897. Holzinger, 'General v. Moltke's Einwirkung auf den Strategischen Gang des Krieges gegen Daenemark 1864' in *Militär-Wochenblatt*, Beiheft 3, No. 4 (1897); Gordon Craig sums up Fontane's Danish War book in *Theodor Fontane*, pp. 79–85.
 6. Kessel, *Moltke*, p. 362.
 7. *Ibid.*, pp. 364–6.
 8. Carr, *Origins*, p. 71.
 9. Sheehan, *German History*, pp. 888–92.
 10. *Ibid.*, p. 368; in the *Manchester Guardian* of 16 February 1864, Friedrich Engels wrote that, in contrast to the general assumption that the Germans outnumbered the Danes three to one, in reality it was slightly less than two to one. About the same, Engels said, that Wellington and Blücher had over Napoleon in 1815. *Engels as Military Critic*, eds W. H. Chaloner and W. O. Henderson (Westport, Conn., 1959), pp. 118–20.
 11. Kessel, *Moltke*, p. 371.
 12. *Ibid.*, p. 383.
 13. *Ibid.*, p. 376.
 14. Theodor Fontane, *Der Schleswig-Holsteinische Krieg im Jahr 1864* (Berlin, 1866), 2 vols, Vol. I, p. 31.
 15. Prinzen Kraft zu Hohenlohe-Ingelfingen, *Aus meinen Leben: Aufzeichnungen* (3 vols, Berlin, 1906), Vol. III, p. 17.
 16. *Ibid.*, pp. 13–14. 'Zu Befehl' – yes Sir!
 17. Fontane, *Schleswig-Holsteinische Krieg*, Vol. I, p. 48.
 18. *Ibid.*, Vol. I, pp. 1–7.
 19. Few historians have dealt with weather as a factor in war. The reasons for this are varied. Discounting the extreme examples of French and German armies nearly perishing in Russian winters, in 1812–13 and 1941–44, respectively, perhaps nineteenth-century armies mainly tried to fight during the traditional campaign season, from April to October, when they could find food for their horses in the fields. Harold A. Winters, *Battling the Elements: Weather and Terrain in the Conduct of War* (Baltimore, 1998).
 20. Daniel Hughes, *Moltke on the Art of War* (Novato, Calif., 1993), p. 207.
 21. Fontane, *Schleswig-Holsteinische Krieg*, Vol. I, p. 57.
 22. Hans Delbrück, 'Dybbol und Alsen' in *Preussischer Jahrbücher*, Vol. 60 (October 1887), pp. 18–63.
 23. Kessel, *Moltke*, p. 388.

24. Delbrück, 'Dybbol und Alsen', p. 384. These numbers are too high.
25. *Ibid.*, p. 376.
26. Holzling, 'General v. Moltkes Einwirkung', pp. 138–41.
27. Delbrück, 'Dybbol und Alsen', pp. 384–5.
28. Fontane, *Schleswig-Holsteinische Krieg*, p. 52.
29. Austrian accounts calls this the battle of 'Oeversee'. Frederick von Fischer, *Der Krieg in Schleswig und Jütland im Jahre 1864* (Vienna, 1870). pp. 123–6. Danish writers describe it as 'Oversø-Sankelmark'. Johs Nielsen, *1864 Da Europa gik af lave* (Copenhagen, 1975) and N. Neergaard, *Under Junigrundloven. En Fremstilling af Det Danske Folks Politiske historier fra 1848 til 1866* (Copenhagen, 1916).
30. A. Gallenga, *The Invasion of Denmark* (2 vols, 1864), Vol. II, pp. 136–9.
31. Fontane, *Schleswig-Holsteinische Krieg*, Vol. I, p. 55.
32. F. J. G. Count Waldersee, *Krieg gegen Daenemark im Jahre 1864* (Berlin, 1865), Beilage No. 7. B, der Schanzen bei Missunde.
33. Gallenga, *The Invasion of Denmark*, Vol. II, p. 140.
34. *Weapons: an International Encyclopedia* (1990), pp. 13, 21.
35. Craig, *Fontane*, p. 87.
36. Edward Dicey, *The Schleswig-Holstein War* (2 vols, London, 1864), Vol. I, pp. 113–15.
37. Herman Granier, *Der Feldzug von 1864* (Berlin, 1897). p. 36.
38. Waldersee, *Krieg gegen Daenemark*, p. 38.
39. *Ibid.*, pp. 40–1; Fontane, *Schleswig-Holsteinische Krieg*, Vol. I, p. 46.
40. Waldersee, *Krieg gegen Daenemark*, pp. 43–5.
41. Granier, *Feldzug von 1864*, p. 37; Waldersee, *Krieg gegen Daenemark*, p. 48.
42. *Ibid.*, p. 51.
43. This correspondence was referred to by Holzling, 'General v. Moltkes Einwirkung', p. 143.
44. Fontane, *Schleswig-Holsteinische Krieg*, Vol. I, p. 46.
45. *Ibid.*, Vol. I, p. 78.
46. *Weapons: an International Encyclopedia*, pp. 113, 190.
47. Fontane, *Schleswig-Holsteinische Krieg*, Vol. I, p. 92; Fischer, *Der Krieg in Schleswig*, pp. 94ff.; Waldersee, *Krieg gegen Daenemark*, pp. 88ff.
48. Fontane, *Schleswig-Holsteinische Krieg*, Vol. I, p. 92.
49. Kraft zu Hohenlohe, *Aufzeichnungen*, Vol. III, p. 125.
50. Christopher Duffy, *The Fortress in the Age of Vauban and Frederick the Great, 1660–1789* (1985), pp. 1–3.
51. Holzling, 'General v. Moltkes Einwirkung', p. 133.
52. Delbrück, 'Dybbol und Alsen' p. 376.
53. *Ibid.*, p. 380.
54. Dicey, *Schleswig-Holstein War*, Vol. II, pp. 31–52.
55. *Ibid.*
56. Alfred Vagts, *Landing Operations* (Harrisburg, Pa, 1946), preface.
57. Kessel, *Moltke*, pp. 379–430; Delbrück, 'Dybbol und Alsen', p. 377; Lawrence Sondhaus, *Preparing for Weltpolitik* (Annapolis, Md, 1997), pp. 71–9.
58. *Ibid.*, p. 379.
59. Delbrück, 'Dybbol und Alsen', p. 380.

60. *Denkwürdigkeiten des Generals und Admirals Albrecht v. Stosch, Briefe und Tagebuchblätter*, ed. Ulrich v. Stosch (2nd edn, Stuttgart, 1904), p. 55.
61. For Hindersin see 'A Little Military History' in Buchholz, *Delbrück's Modern Military History*, pp. 60ff.
62. Twenty-two 24-pound rifled siege guns, sixteen 25-pound siege mortars, thirty-four 12-pounders, twenty-two 6-pounders, sixteen light 12-pounders, and a dozen 7-pounders.
63. Wilhelm Rüstow, *Der deutsch-daenish Krieg 1864* (Zurich, 1864), p. 464.
64. Dicey, *Schleswig-Holstein War*, Vol. II, p. 159.
65. Rüstow, *Deutsch-daenische Krieg*, p. 456.
66. Nielsen, 1864, pp. 242–3; Neergaard, *Under Junigrundloven*, pp. 1101–19.
67. Rüstow, *Deutsch-daenische Krieg*, p. 454; Buchholz, *Delbrück's Modern Military History*, pp. 61ff.
68. Rahne, *Mobilmachung*, p. 42.
69. Dicey, *Schleswig-Holstein War*, Vol. II, p. 137.
70. *Ibid.*, Vol. II, p. 119.
71. *Ibid.*, Vol. II, p. 31.
72. *Ibid.*, Vol. I, pp. 284–8.
73. *Ibid.*, Vol. II, p. 25.
74. *Ibid.*, Vol. II, p. 65.
75. *Ibid.*, Vol. II, p. 66; *Websters New International Dictionary*, 1934, p. 793.
76. Delbrück, 'Dybbol und Alsen', p. 381.
77. Dicey, *Schleswig-Holstein War*, Vol. II, pp. 138–42.
78. *Ibid.*, Vol. II, pp. 147–56.
79. *Ibid.*, Vol. II, p. 159.
80. *Ibid.*, Vol. II, p. 166.
81. *Ibid.*, Vol. II, pp. 74–175.
82. *Ibid.*, Vol. II, p. 176.
83. *Ibid.*, Vol. II, p. 78.
84. *Ibid.*, Vol. II, p. 105.
85. *Ibid.*, Vol. II, p. 106.
86. Delbrück, 'Dybbol und Alsen', p. 58.
87. *Ibid.*, p. 59; Wrangel was kept on for a few weeks as a 'Schaustück' for the Austrians, but he no longer was in operational command. Stosch, *Denkwürdigkeiten*, p. 56; Kessel, *Moltke*, pp. 403–4.
88. Delbrück, 'Dybbol und Alsen', p. 384.
89. *Ibid.*, Vol. II, p. 309.
90. Fontane, *Schleswig-Holsteinische Krieg*, Vol. II, p. 310.
91. Cf. Moltke's account for Marie, in Horst, *Moltke*, pp. 265–75, in which he writes that Marie may let other, interested persons, read the letter if they wish. So he is not giving away any secrets in this account. He also says that this is not at all an official account, but merely the impressions of an observer.
92. Werner von Siemens had graduated from it in the 1830s and spoke glowingly about its mathematicians, chemists and physicists: he said the school gave him a clear edge over his peers. Wilfried Feldenkircken, *Werner von Siemens: Inventor and International Entrepreneur* (Columbus, 1994), pp. 32–3.
93. Fontane, *Schleswig-Holsteinische Krieg*, Vol. II, pp. 312–14.

94. Ten-page letter to his wife, dated 3 July 1864. Horst, *Moltke*, pp. 265–75.
95. Fontane, *Schleswig-Holsteinische Krieg*, Vol. II, p. 325.
96. *Ibid.*, Vol. II, p. 331.
97. Nielsen, 1864, p. 329; Waldersee, *Krieg gegen Daenemark*, pp. 506–8.
98. Prussian officers called their men ‘children’, using the same grammatical structure used in adult–child discourse. Alfred Vagts, a mortar platoon leader in World War I, told me this long ago from his own experiences in the World War I German Army.
99. Fontane, *Schleswig-Holsteinische Krieg*, Vol. II, p. 347.
100. Waldersee, *Krieg gegen Daenemark*, pp. 545–7; Fischer, *Krieg in Schleswig*, pp. 356–7.
101. For a view of Lundby from Schlutterbach’s regiment, there is Albert von Boguslawski, *Geschichte des 3. Niederschlesischen Infanterie-Regiments Nr. 50* (Berlin, 1887), pp. 55–65.
102. Fontane, *Schleswig-Holsteinische Krieg*, Vol. II, p. 349.
103. *Ibid.*, Vol. II, p. 350. Kessel, *Moltke*, p. 425.
104. Carr, *Origins*, p. 85.
105. Horst, *Moltke*, pp. 278–9.
106. *Ibid.*, p. 279.
107. Letter to Marie, dated 25 August 1864, GGS, *Moltkes Gesammelte Schriften*, Vol. VI, p. 421.
108. Kessel, *Moltke*, pp. 417–18.

5 THE AUSTRIAN WAR, 1866

1. Geoffrey Wawro, *The Austro-Prussian War* (New York, 1996), p. 277; Gordon Craig, *The Battle of Koeniggraetz* (Philadelphia, 1964), p. 166.
2. The critic was Friedrich Engels. James Sheehan, *German History, 1770–1866* (New York, 1989), p. 902.
3. Larry Addington, *The Patterns of War since the Eighteenth Century* (Bloomington, Ind., 1984), p. 65.
4. Craig, *Koeniggraetz*, p. 25.
5. Fontane, *Deutsche Krieg*, Vol. I, pp. 248–9.
6. Istvan Deak, *Beyond Nationalism: a Social and Political History of the Habsburg Officer Corps, 1848–1918* (1990), p. 52; Wawro, *Austro-Prussian War*, pp. 56–65.
7. Craig, *Koeniggraetz*, p. 15.
8. This was a reverse salient or cultural lag.
9. Bucholz, *Delbrück’s Modern Military History*, pp. 73–4.
10. Wawro, *Austro-Prussian War*, pp. 24–32.
11. Kessel, *Moltke*, pp. 426–7.
12. Prinz Friedrich Karl von Preussen, *Denkwürdigkeiten aus seinem Leben*, ed. Wolfgang Foerster (3 vols, Stuttgart, 1910), Vol. 1, pp. 362–3.
13. Edward Taaffe, Howard Gauthier and Morton O. Kelly, *Geography of Transportation* (2nd edn, 1996), pp. 70–140.
14. *Ibid.*, pp. 73ff., 134ff.

15. Michael F. Barnsley, *Fractals Everywhere* (2nd edn, 1988), p. 1.
16. T. S. Eliot, 'Tradition and the Individual Talent' quoted in Calvin Tomkins, 'The Escape Artist: a New Rothko Retrospective at the Whitney', *The New Yorker*, 28, Sept. 1998, pp. 102–3; Kessel, *Moltke*, p. 428.
17. Bucholz, *Prussian War Planning*, p. 41.
18. *Ibid.*, p. 44.
19. *Ibid.*, p. 48; Michael Salewski, 'Moltke, Schlieffen und die Eisenbahn' in Roland G. Foerster (ed.) *Generalfeldmarschall von Moltke: Bedeutung und Wirkung* (Munich, 1991), p. 91.
20. Bucholz, *Prussian War Planning*, pp. 44–5.
21. Max Jaehns, *Feldmarschall Moltke* (3 vols, Berlin, 1900), Vol. II, p. 375; Carr, *Origins*, pp. 119–20.
22. Sheehan, *German History*, pp. 899–907.
23. Carr, *Origins*, pp. 135–6.
24. Jaehns, *Moltke*, Vol. II, p. 376.
25. *Ibid.*, Vol. II, p. 378.
26. Nomenclature borrowed from Timothy O'Brien, 'Taking the Danger out of Risk: Chase says Models Helped it Avoid Financial Minefields', *NY Times*, 20 January 1999, pp. C1, C9.
27. Jaehns, *Moltke*, Vol. II, pp. 379–80.
28. *Ibid.*, Vol. II, p. 382.
29. Kessel, *Moltke*, p. 332.
30. Waldersee, *Denkwürdigkeiten des General-Feldmarschalls Alfred Grafen von Waldersee*, ed. Heinrich O. Meisner (3 vols, 1922), Vol. I, pp. 22–3.
31. *Ibid.*, Vol. I, pp. 22–4.
32. Kessel, *Moltke*, pp. 433–7.
33. *Ibid.*, p. 438.
34. *Ibid.*
35. *Ibid.*, p. 444.
36. Hermann Rahne, *Mobilmachung*, p. 50; not much has been written about horses in nineteenth-century war, except for cavalry actions. Horse usage goes far beyond that. F. M. L. Thompson, *Horses in European Economic History* (1983); R. L. DiNardo and Austin Bay, 'Horse-Drawn Transport in the German Army', *Journal of Contemporary History*, Vol. 23 (1988), pp. 129–42.
37. Bucholz, *Prussian War Planning*, p. 162.
38. Kessel, *Moltke*, p. 445.
39. *Ibid.*, pp. 445–6.
40. Jaehns, *Moltke*, Vol. II, p. 385.
41. Kraft zu Hohenlohe, *Aus meinem Leben*, Vol. III, p. 211.
42. Jaehns, *Moltke*, Vol. II, p. 385.
43. Carr, *Origins*, p. 129.
44. *Ibid.*, p. 128. Although Prussia could not fight at all without horses it could and did fight without food, in 1866 only 3 of 8½ corps had full supplies with them. Wolfgang Petter, 'Die Logistic des deutschen Heeres im deutsch-franzoesischen Krieg von 1870/71', in *Die Bedeutung der Logistic für die militärische Führung von Antike bis in die neueste Zeit*, p. 113. Schellendorff estimated that an army corps, advancing by two roads to a depth of ten

- miles, would do fine in large towns but would need five miles of country farms to live for one or two days without military supply. And that an army of 100 000–120 000, in a country of average population and agricultural fertility, with its units within a day's march of each other, could subsist without magazines or supply arrangements during an advance that was interrupted by halts of a single day's duration. Schellendorff, *Duties of the General Staff*, p. 411. It was early summer, before the harvest in most places: sufficient food was available.
45. Kessel, *Moltke*, p. 445.
 46. Wawro, *Austro-Prussian War*, p. 54, Craig, *Koeniggraetz*, pp. 34–5.
 47. Kraft zu Hohenlohe, *Aus meinem Leben*, pp. 211–25.
 48. Carr, *Origins*, p. 129.
 49. Showalter, *The Wars of Frederick the Great*, pp. 342–52.
 50. Jaehns, *Moltke*, Vol. II, p. 386.
 51. *Ibid.*, Vol. II, p. 389.
 52. Kessel, *Moltke*, pp. 446–7.
 53. Michael Salewski emphasizes the central role railroads played in Moltke's operational and strategic thinking, 'Moltke, Schlieffen und die Eisenbahn' in Foerster (ed.), *Generalfeldmarschall von Moltke, Bedeutung und Wirkung*, pp. 89–102.
 54. Kessel, *Moltke*, p. 449.
 55. Jaehns, *Moltke*, Vol. II, p. 391.
 56. *Ibid.*
 57. Carr, *Origins*, p. 130.
 58. Kessel, *Moltke*, p. 332.
 59. Carr, *Origins*, p. 130.
 60. Jaehns, *Moltke*, Vol. II, p. 393.
 61. *Ibid.*, Vol. II, p. 392.
 62. *Ibid.*, Vol. II, p. 395.
 63. *Ibid.*, Vol. II, p. 428.
 64. Wilhelm Bigge, *Feldmarschall Graf Moltke* (2 vols, 1901), Vol. II, p. 197.
 65. Martin van Creveld, *Command in War* (1985), pp. 122–3.
 66. Bronsart von Schellendorff, *The Duties of the General Staff* (rev. edn, 1905), p. 288.
 67. An example is the war diary of W. von Klenck, squadron commander in the Royal Saxon Guard Cavalry Regiment for the battle of St Privat, 15–19 August 1870, translated and published as *St. Privat, German Sources*, translated by Harry Bell (1914).
 68. *Ibid.*, p. 294.
 69. *Ibid.*, pp. 295–7.
 70. Carl-Gero von Ilsemann, 'Das operative Denken des Aelteren Moltke' in Horst Boog et al., *Operatives Denken und Handeln in deutschen Streikraeften im 19 und 20. Jahrhundert* (Bonn, 1988); Roland G. Foerster, 'The Operational Thinking of the Elder Moltke and its Consequences' in *Operational Thinking in Clausewitz, Moltke, Schlieffen and Manstein* (1988), pp. 21–40; Shimon Naveh, *In Pursuit of Military Excellence: the Evolution of Operational Theory* (1997), pp. 36–7, 57–8 and *passim*.

71. Michael D. Krause, 'Moltke and the Origins of the Operational Level of War' in Foerster (ed.), *Generalfeldmarschall von Moltke, Bedeutung und Wirkung*, pp. 65–79.
72. Christopher Bellamy, *The Evolution of Land Warfare* (1990), p. 60, quoted from Moltke, *Taktische-strategische Aufsätze aus den Jahren 1857 bis 1871* (1891), Vol. V, p. 291.
73. Kraft zu Hohenlohe, *Aus meinem Leben*, p. 226.
74. Salewski, 'Moltke, Schlieffen and die Eisenbahn', p. 92.
75. Carr, *Origins*, p. 132.
76. *Ibid.*, p. 134.
77. For Falckenstein cf. *Denkwürdigkeiten des General-feldmarschalls Alfred Grafen von Waldersee*, ed. H. O. Meisner (2 vols, 1922), Vol. I, pp. 30–3.
78. Wawro, *Austro-Prussian War*, p. 77.
79. Using telegraphic communications to speed up the process. Dennis Showalter, 'Soldiers into Postmasters? The Electric Telegraph as an Instrument of Command in the Prussian Army', *Military Affairs*, Vol. 46, No. 2 (April 1973), p. 50.
80. For this whole affair of Langensalza cf. Hans Delbrück, 'Langensalza und Vogel von Falckenstein', *Preussische Jahrbücher*, Vol. 59 (May 1887), reprinted in Delbrück, *Erinnerungen, Aufsätze und Reden* (1907), pp. 12–47.
81. Wawro, *Austro-Prussian War*, p. 80.
82. *Ibid.*, p. 77.
83. *Ibid.*, p. 78.
84. Craig, *Koeniggrätz*, p. 40; Wawro, *Austro-Prussian War*, p. 77.
85. *Ibid.*, p. 118.
86. Two other well-known equations for estimating mathematically the results of combat are the Lanchester and the Dupuy equations. Lanchester equations link casualty and attrition rates to target acquisition, fire rates and weapons effectiveness on both sides of the battle. The Lanchester model evolved at about the same time as Naumann. Dupuy is a late twentieth-century American model, which factors in tanks, artillery and other equipment as well as relative casualty rates. Michael O'Hanlon, *Defense Planning for the Late 1990s: Beyond the Desert Storm Framework* (1995), appendix A.
87. Bucholz, *Prussian War Planning*, p. 88.
88. Theodor Fontane, *Der Deutsche Krieg von 1866* (2 vols, 2 edn, Berlin, 1871), Vol. I, p. 293.
89. Wawro, *Austro-Prussian War*, p. 137.
90. *Ibid.*, p. 144.
91. *Ibid.*, pp. 137–40.
92. Fontane, *Deutsche Krieg*, Vol. I, p. 301.
93. *Ibid.*, Vol. I, p. 303.
94. Wawro, *Austro-Prussian War*, p. 143; Fontane's casualties were 7372 Austrian and 1120 Prussian; *Deutsche Krieg*, Vol. I, p. 317.
95. Wawro, *Austro-Prussian War*, pp. 144–5.
96. Craig, *Koeniggrätz*, p. 62.
97. H. M. Hozier, *The Seven Weeks War* (2 vols, London, 1867), Vol. I, pp. 265–7.
98. Fontane, *Deutsche Krieg*, Vol. I, p. 360.
99. Craig, *Koeniggrätz*, p. 63; Fontane, *Deutsche Krieg*, Vol. I, pp. 356–89.

100. Wawro, *Austro-Prussian War*, p. 147. Blumenthal thought Bonin should have been removed on the spot. Craig, *Koeniggraetz*, p. 64.
101. Fontane, *Deutsche Krieg*, Vol. I, pp. 383–9.
102. Wawro, *Austro-Prussian War*, pp. 151–2.
103. Craig, *Koeniggraetz*, p. 114.
104. *Ibid.*, p. 64; Wawro, *Austro-Prussian War*, p. 152.
105. Fontane, *Deutsche Krieg*, pp. 322–39.
106. Schowalter, *Wars of Frederick the Great*, p. 363.
107. Fontane, *Deutsche Krieg*, Vol. I, pp. 322–5; Wawro, *Austro-Prussian War*, pp. 165–7; Craig, *Koeniggraetz*, pp. 64–6.
108. Wawro, *Austro-Prussian War*, pp. 169–70.
109. Fontane, *Deutsche Krieg*, Vol. I, p. 326.
110. Wawro, *Austro-Prussian War*, pp. 173–4.
111. John English, 'The Operational Art: Development in the Theories of War' in *The Operational Art: Developments in the Theories of War*, ed. B. J. C. McKercher and Michael A. Hennessy (Westport, Conn., 1996), p. 8.
112. Daniel J. Hughes, *Moltke on the Art of War* (Novato, Calif., 1993), p. 231.
113. Franz Uhle-Wettler, 'Auftragstaktik: Mission Orders and the German Experience' in Richard D. Hooker, Jr, *Maneuver Warfare: an Anthology* (Novato, Calif., 1993).
114. Hughes, *Moltke on the Art of War*, pp. 12, 177.
115. Craig, *Koeniggraetz*, p. 40.
116. Hughes, *Moltke on the Art of War*, p. 184.
117. Van Creveld describes 14 of these. *Command in War*, pp. 118–40.
118. Cf. Albrecht von Stosch's comments from his position on the staff of the crown prince's Second Army, in *Denkwürdigkeiten des Generals und Admirals Albrecht von Stosch*, ed. Ulrich von Stosch (2nd edn, Stuttgart, 1904), pp. 70–85.
119. Tom Clancy and Fred Franks, Jr, *Into the Storm: a Study in Command* (1997), p. 292.
120. Craig, *Koeniggraetz*, p. 72.
121. *Ibid.*
122. *Ibid.*, p. 85.
123. *Ibid.*
124. GGS, *Moltkes Gesammelte Schriften*, Vol. VI, p. 446.
125. Craig, *Koeniggraetz*, p. 92.
126. *Ibid.*, p. 97.
127. *Ibid.*, p. 112.
128. *Ibid.*, p. 109.
129. *Ibid.*, p. 123.
130. *Ibid.*, p. 124.
131. Paret, *Makers of Modern Strategy*, p. 294.
132. *Ibid.*
133. Craig, *Koeniggraetz*, p. 198.
134. *Ibid.*, pp. 159–60.
135. *Ibid.*, p. 162.
136. Horst, *Moltke*, p. 288.
137. *Ibid.*, p. 289.

138. Moltke's letters to Marie, describing the battle, are remarkably close to the best twentieth-century accounts such as Gordon Craig. On the other hand, in one letter, he gives her leave to let others read it, saying it is only an account of his impressions.
139. Wawro, *Austro-Prussian War*, p. 27; Craig, *Koeniggraetz*, p. 166.
140. Richard M. Swain, *'Lucky War': Third Army in the Desert Storm* (1994), p. xxvii.
141. Van Creveld's examples tend to support the 'near-run' thesis, but his conclusions are closer to those advanced here. He says that Moltke's risks were based on a realization that individual Prussian forces were strong enough to withstand larger Austrian forces for a certain period of time and that Moltke built into his system large margins of safety to ensure that these periods of time were not exceeded and things allowed to get out of hand. *Command in War*, p. 121.
142. Gordon Craig, *The Politics of the Prussian Army* (New York, 1955), p. 198.
143. *Ibid.*, p. 203.
144. Horst, *Moltke*, p. 293; John C. G. Roehl, *The Kaiser and his Court: Wilhelm II and the Government of Germany* (1996), pp. 87–90.
145. This was followed by nearly 50 pages of etchings of more than 100 of the important memorials, with the words, military units and names inscribed written beside each illustration. Fontane, *Deutsche Krieg 1866*, Vol. II, appendix, pp. 1–2.

6 THE FRENCH WAR, 1870–71

1. Michael Howard, *The Franco-Prussian War* (New York, 1961), pp. 1, 12–13. The opposite view is also possible. That the French, because they fought mainly colonial wars against small, less well-equipped and technologically backward native peoples, were, in reality, not up to the quality levels of the European military. Nor were French commanders experienced and practised in handling armies: their experience had been with regiments and divisions and they had little practical experience with large-scale manoeuvres.
2. It is impossible to render this into English as it sounded in German, where it was a play on three verbs – 'erdacht, gebracht, gemacht' – which sounded alike. 'Der den Feldzugsplan erdacht, Der ihn zu Ende gebracht, Moltke hat es gut gemacht.' Bigge, *Moltke*, Vol. II, p. 251; GGS, *Moltkes Gesammelte Schriften*, Vol. VI, p. 464.
3. Howe, *Letters of Bancroft*, Vol. II, p. 218.
4. Friedrich A. Dressler, *Moltke in his Home* (London, 1907), a translation of the same author's *Moltke in seiner Hauslichkeit* (Berlin, 1904). Dressler was a pianist and composer who was befriended by the family for his musical abilities. He often dined and played the piano in Moltke's home from late 1868 up to and including the night Moltke died, p. 66.
5. Jaehns, *Moltke*, Vol. II, p. 463.
6. *Ibid.*, Vol. II, p. 465; Kessel, *Moltke*, p. 494.
7. Kessel, *Moltke*, p. 494.

8. GGS, *Moltkes Gesammelte Schriften*, Vol. V, p. 42.
9. Kessel, *Moltke*, p. 495.
10. Jaehns, *Moltke*, Vol. II, p. 476. Kessel, *Moltke*, p. 476. His younger and favourite sister Auguste had lost her husband in 1856. His brother Fritz had lost his wife in 1864. In December 1868 in Berlin for the funeral of Marie von Moltke, she had been taken aside by Queen Auguste, who told her it was her and her brother's duty to Germany to move into Moltke's apartment in Berlin to provide support for the General Staff chief. From then on they took over day-to-day management of his household. GGS, *Moltkes Gesammelte Schriften*, Vol. V, p. 30.
11. GGS, *Moltkes Gesammelte Schriften*, Vol. VI, p. 456. At the ratification ceremony for the preliminary peace treaty, 29 July 1866, the king inducted both Moltke and Roon into the order of the Black Eagle.
12. *Das Tagebuch der Baronin Spitzenberg* (5th edn, Göttingen, 1989), *passim*.
13. Lilian Handlin, *George Bancroft, the Intellectual as Democrat* (New York, 1984), p. 295; Russell B. Nye, *George Bancroft, Brahmin Rebel* (New York, 1944), pp. 267–78.
14. Handlin, *Bancroft*, p. 292; cf. James M. Brophy, *Capitalism, Politics, and Railroads in Prussia, 1830–1870* (Columbus, 1998), *passim*. Bancroft, *Letters*, Vol. II, p. 196.
15. This is confirmed by General Philip Sheridan, American Civil War commander who was an observer at the battle of Sedan and spoke with Moltke several times. P. H. Sheridan, *Personal Memoirs* (2 vols, New York, 1888), Vol. II, pp. 362–410; Joseph Hergescheimer, *Sheridan: a Military Narrative* (Boston, 1931), pp. 3–8.
16. M. A. DeWolfe Howe, *The Life and Letters of George Bancroft* (2 vols, 1971) (originally published in 1908), Vol. II, pp. 219–20.
17. Handlin, *Bancroft*, Ch. 10; Nye, *Bancroft*, Ch. 7.
18. Invisible to historians because research using regimental rolls has not yet been put together at this level. Kraft zu Hohenlohe remarks that many of the same officers commanded in 1866 and 1870. Prince Kraft zu Hohenlohe-Ingelfingen, *Letters on Artillery* (London, 1888), pp. 4–5.
19. Kessel, *Moltke*, p. 546.
20. Harry Bell, *St. Privat, German Sources* (1914), Appendix A, pp. 473–7.
21. Moltke uses virtually these same words in his 'Instructions for Large Unit Commanders', Hughes, *Moltke on the Art of War*, p. 172.
22. Kessel, *Moltkes erster Feldzug*, p. 1; Hughes, *Moltke on the Art of War*, p. 172.
23. Bucholz, *Prussian War Planning*, pp. 47–8.
24. Kessel, *Moltke*, p. 502.
25. Bucholz, *Prussian War Planning*, p. 49.
26. *Ibid.*, pp. 51–2; Rahne, *Mobilmachung*, p. 58.
27. Rahne, *Mobilmachung*, p. 58.
28. 'The German Railroad Concentration of 1870', *The Military Historian and Economist*, Vol. 3, No. 2 (1910), pp. 1–32; Gustav Lehmann, *Die Mobilmachung von 1870–71* (Berlin, 1905); Bucholz, *Prussian War Planning*, p. 51.
29. 'The German Railroad Concentration of 1870', p. 32.
30. Public utilities in the USA still use this method to supply coal via railroad, for example, to their electrical generating plants.

31. Bucholz, 'Armies, Railroads and Information: the Birth of Industrial Mass War' in Jane Summerton (ed.), *Changing Large Technical Systems* (1994).
32. Lehmann, *Mobilmachung 1870*, p. 34.
33. Rahne, *Mobilmachung*, p. 58.
34. Bucholz, *Prussian War Planning*, p. 49; Kessel, *Moltke*, pp. 503ff.
35. Kessel, *Moltke*, pp. 508–10.
36. *Ibid.*, p. 518.
37. *Ibid.*, pp. 505–12.
38. Craig, *Koeniggratz*, pp. 50, 114; Wawro, *Austro-Prussian War*, p. 145; Fontane, *Deutsche Krieg*, Vol. I, pp. 356–89.
39. Hughes, *Moltke on the Art of War*, pp. 237, 241.
40. Dennis Showalter, 'Prussian Technology and War: Artillery from 1815 to 1914' in Ronald Haycock and Keith Neilson, *Men, Machines and War* (Waterloo, 1987), p. 125.
41. Kraft zu Hohenlohe, *Letters on Artillery*, p. 53.
42. Dennis Showalter, *Railroads and Rifles: Soldiers, Technology and the Unification of Germany* (Hamden, 1975), is useful on artillery questions.
43. Schowalter, 'Prussian Technology and War', pp. 128–30.
44. Bucholz, *Delbrück's Modern Military History*, pp. 60–5.
45. *Ibid.*
46. *Ibid.*
47. *Ibid.*
48. Kraft zu Hohenlohe, *Letters on Artillery*, p. 169.
49. *Ibid.*, p. 182.
50. Kessel, *Moltke*, p. 521.
51. Kraft zu Hohenlohe, *Aus meinem Leben*, pp. 357–93.
52. Kraft zu Hohenlohe, *Letters on Artillery*, p. 223.
53. Van Creveld, *Supplying War*, p. 2.
54. *Ibid.*, p. 112.
55. *Ibid.*, pp. 84, 103ff.
56. Bucholz, *Prussian War Planning*, p. 50.
57. Crichton, *Jurassic Park*, p. 67.
58. Kessel, *Moltke*, p. 503.
59. *Ibid.*, p. 504.
60. *Ibid.*, p. 536.
61. Rahne, *Mobilmachung*, p. 56.
62. Kessel, *Moltke*, p. 477.
63. Connelly, *Blundering to Victory*, p. 195; Kessel, *Moltke*, p. 536.
64. Kessel, *Moltke*, p. 524.
65. *Ibid.*, pp. 528–38.
66. There is a description of this terrain and the opening phase of the 1870 War in Patrick O'Sullivan and Jesse W. Miller, Jr, *The Geography of Warfare* (New York, 1983), pp. 69–73.
67. *Ibid.*, p. 477.
68. Kessel, *Moltke*, p. 481.
69. Jaehns, *Moltke*, Vol. II, pp. 562–70.
70. Kessel, *Moltke*, pp. 527–30.
71. *Ibid.*, p. 332.

72. Compare Max Jaehns' ideas in Jaehns, *Moltke*, Vol. II, p. 470.
73. *Ibid.*, Vol. II, p. 469.
74. Kessel, *Moltke*, p. 499.
75. Bradley J. Meyer, 'The Operational Art: the Elder Moltke's Campaign Plan for the Franco-Prussian War' in *The Operational Art*, edited by B. J. McKercher and Michael Hennessy (Westport, Conn., 1996), mainly for the final format these war plans took.
76. *Ibid.*, p. 540.
77. *Ibid.*, p. 541.
78. Kessel, *Moltke*, p. 521.
79. *Ibid.*, pp. 503–21; Hughes, *Moltke on the Art of War*, pp. 171–224.
80. Kessel, *Moltke*, pp. 523–43.
81. Carr, *Origins*, pp. 183ff; David Blackbourn, *The Long Nineteenth Century: a History of Germany, 1780–1918* (New York, 1998), pp. 255ff; Howard, *Franco-Prussian War*, p. 55.
82. Kessel, *Moltke*, pp. 543–4.
83. *Ibid.*, p. 546.
84. Jaehns, *Moltke*, Vol. II, p. 486.
85. Howe, *Letters of George Bancroft*, Vol. II, p. 238.
86. Handlin, *Bancroft*, p. 295; Nye, *Bancroft*, pp. 267–78.
87. Kessel, *Moltke*, p. 545.
88. Rahne, *Mobilmachung*, pp. 61–2.
89. Schellendorff, *Duties of the General Staff*, p. 247.
90. Howard, *Franco-Prussian War*, p. 60 .
91. Boehn, *Generalstabsgeschaeft*, p. 284.
92. Rahne, *Mobilmachung*, pp. 61–8; Lehmann, *Mobilmachung 1870, passim*.
93. Boehn, *Generalstabsgeschaeft*, p. 321.
94. *Ibid.*, p. 324.
95. *Ibid.*
96. *Ibid.*, p. 327.
97. *Ibid.*, p. 324.
98. Rahne, *Mobilmachung*, p. 63; Boehn, *Generalstabsgeschaeft*, p. 284.
99. Howard, *Franco-Prussian War*, p. 62.
100. *Ibid.*
101. Major von Blume, 'Vom Generalstabe des Grossen Hauptquartiers im Kriege 1870/71' in GGS, *Moltkes Gesammelte Schriften*, Vol. V, p. 286.
102. Cf. Julius von Verdy du Vernois, *With the Royal Headquarters in 1870–71* (London, 1897) and *Journals of Field-Marshal Count von Blumenthal for 1866 and 1870–71*, ed. Albrecht von Blumenthal (London, 1903).
103. Schellendorff, *Duties of the General Staff*, p. 331.
104. Most recently Brad Meyer deals with these issues in McKercher and Hennessy, *The Operational Art*, pp. 39–42.
105. Schellendorff, *Duties of the General Staff*, p. 353.
106. Dennis Showalter, 'Soldiers into Postmasters? The Electric Telegraph as an Instrument of Command in the Prussian Army', *Military Affairs*, Vol. 46, No. 2 (April 1973), pp. 48–52.
107. *Ibid.*, p. 283. Both Bronsart von Schellendorff and Verdy du Vernois circulated continuously among the army and corps commanders, visiting the

crown princes of Prussia and Saxony, bringing news of Mars le Tour, gathering news and clarifying orders. As they travelled they repeatedly ran into men they knew. Typical of this, during the final battle for Sedan, Verdy liaised with General von Kirchbach, commander of V Corps, his old teacher at the War Academy, whose chief of staff, Lt. Col. von der Esch, was an old friend from regimental days. Verdy du Vernois, *With the Royal I Headquarters*, pp. 45–51, 72, 129. There are some indications that this liaison was routinely carried out in the late afternoon, so that they could report the latest troop dispositions for the following day's operations.

108. *Journals of Blumenthal*, pp. 75–111.
109. *Ibid.*, p. 284.
110. *Ibid.*, p. 285.
111. *Ibid.*, p. 286.
112. Schellendorff, *Duties of the General Staff*, p. 313.
113. Thomas J. Adriance, *The Last Gaiter Button: a Study of the Mobilization and Concentration of the French Army in the War of 1870* (Westport, Conn., 1982); Richard Holmes, *The Road to Sedan: the French Army, 1866–70* (London, 1984).
114. Scott Lackey, 'The Habsburg Army and the Franco-Prussian War: the Failure to Intervene and its Consequences', *War in History*, Vol. 2, No. 2 (1995), p. 169.
115. Howard, *Franco-Prussian War*, p. 64; Lackey, 'Habsburg Army', p. 169.
116. Lackey, 'The Habsburg Army', pp. 150–79.
117. William Serman, 'French Mobilization in 1870', paper delivered at the German Historical Institute Conference, *On the Road to Total War: the American Civil War and the German Wars of Unification, 1861–1871*, Washington, DC, April 1994, p. 4.
118. *Ibid.*, p. 10.
119. Howard, *Franco-Prussian War*, p. 68.
120. *Ibid.*, p. 71.
121. *Ibid.*, p. 77.
122. Lackey, 'The Habsburg Army', p. 165.
123. Howard, *Franco-Prussian War*, p. 79.
124. *Ibid.*, p. 100.
125. Bucholz, *Prussian War Planning*, pp. 80–1.
126. G. F. R. Henderson, *The Battle of Spicheren* (London, 1902), describes and analyses this battle in great detail. Especially good for artillery.
127. D. Ascoli, *A Day of Battle: Mars-La-Tour, 16 August 1870* (London, 1987), p. 73.
128. Fontane, *Krieg gegen Frankreich*, Vol. I, p. 148.
129. *Ibid.*, Vol. I, p. 102.
130. *Ibid.*, Vol. I, p. 151.
131. *Ibid.*, Vol. I, p. 152.
132. Howard, *Franco-Prussian War*, pp. 102–3.
133. *Ibid.*, p. 105.
134. *Ibid.*, p. 107.
135. Fontane, *Krieg gegen Frankreich*, Vol. I, p. 158.
136. Howard, *Franco-Prussian War*, p. 109.

137. Ascoli, *A Day of Battle*, p. 81.
138. *Ibid.*, p. 81.
139. *Ibid.*, p. 82.
140. One of Michael Howard's general observations in *The Franco-Prussian War*, p. 127.
141. *Ibid.*, p. 183.
142. *Ibid.*, p. 188.
143. *Ibid.*, p. 191.
144. *Ibid.*, p. 195.
145. *Ibid.*, p. 196.
146. *Ibid.*, p. 198.
147. *Ibid.*, p. 200.
148. *Ibid.*, p. 199.
149. *Ibid.*, p. 211.
150. Fontane, *Krieg gegen Frankreich*, Vol. I, p. 539.
151. Howard, *Franco-Prussian War*, p. 216.
152. Sheridan, *Personal Memoirs*, Vol. II, pp. 362–410; Hergesheimer, *Sheridan*, pp. 3–8.
153. Howard, *Franco-Prussian War*, p. 118.
154. *Ibid.*, p. 217.
155. Fontane, *Krieg gegen Frankreich*, Vol. I, pp. 513–15, 531–5.
156. *Ibid.*, Vol. I, pp. 536–58.
157. Kessel, *Moltke*, p. 568; Kessel (ed.), *Moltke Gespraech* (Hamburg, 1940), pp. 138ff.
158. *Ibid.*, p. 141; Fontane, *Krieg gegen Frankreich*, Vol. I, pp. 563–74.
159. *Ibid.*, p. 146.
160. *Ibid.*, p. 148; Kessel, *Moltke*, p. 568.
161. J. M. Thompson, *Louis Napoleon and the Second Empire* (New York, 1955), p. 313; Alistair Horne, *The Fall of Paris* (New York, 1967), p. 57.
162. Kessel, *Moltke*, p. 569.

CONCLUSION

1. Franz Herre, *Moltke, Der Mann und sein Jahrhundert* (2nd edn, Stuttgart, 1984), p. 9.
2. *Ibid.*, p. 12.
3. *Ibid.*, p. 10.
4. Dressler, *Moltke in seiner Hauslichkeit*, p. 101.
5. GGS, *Moltkes Gesammelte Schriften*, Vol. V, pp. 290–1.
6. Friedrich A. Dressler, *Moltke in His Home* (London, 1907), pp. 152–8.
7. Robert H. Scales, Jr, 'Cycles of War', *Armed Forces Journal International*, July 1997, pp. 38–42.
8. It is not that the Prussian armies did not make mistakes: they repeatedly made them. But that Prussia's opponents made more of them. For example, Prince Friedrich Charles, commander of the Second Army, was given the mission of overtaking and surrounding Bazaine's army on its retreat

- from Metz on 16 August. Moltke had given the prince carte blanche and the latter, assuming that Bazaine had escaped, threw his army to the west, away from the main body of the French. Confronted with a situation which could have been a serious disaster for the German forces in the area, Bazaine did nothing and allowed Alvensleben's III Corps to bluff his way to victory or at least a draw at Vionville. Two German corps had held the entire French Army at bay. Bazaine was oblivious to his overwhelming superiority. David Ascoli, *A Day of Battle: Mars-la-Tour, 16 August 1870* (London, 1987), pp. 160–5; Howard, *Franco-Prussian War*, pp. 144ff; although many of Martin van Creveld's examples seem to support the opposite view, his conclusions agree with these. He admits that Moltke's system provided a large safety margin to ensure that the inevitable mistakes did not develop into catastrophes. *Command in War*, p. 121.
9. Reverse salients are technical or organizational anomalies resulting from uneven evolution within a system: progress on one front is accompanied by stagnation on others. Thomas Hughes, 'The Evolution of Large Technical Systems', in *The Social Construction of Technological Systems*, ed. W. E. Bijker, T. P. Hughes and R. J. Pinch (Cambridge, Mass., 1987); Bernward Joerges, 'Large Technical Systems: Concepts and Issues', in *The Development of Large Technical Systems*, eds Renate Mayntz and Thomas Hughes (Boulder, Colo., 1988).
 10. Clayton M. Christensen, *The Innovator's Dilemma* (Cambridge, Mass., 1999); Fred Andrews, 'A Primer on Weathering Technologies Storms', *New York Times*, 3 November 1999, p. C10.
 11. Bucholz, *Prussian War Planning*, p. 102.
 12. Fred Andrews, 'Merger Mania Got You Down? So, Start Thinking Small', *New York Times*, pp. C1, C14. This statement may strike those familiar with 50 years of scholarship describing this army as over the top. But the evidence must be re-examined. Look at the way Schlieffen conducted his General Staff war games and rides two generations later: they remind one of a university seminar, conducted in the law or business school, where the adversarial system prepares its students for the harsh real work which this pedagogical situation mimics. And Schlieffen learned his craft by watching Moltke. Bucholz, *Prussian War Planning*, Chs 3 and 4.
 13. Martin van Creveld, *Supplying War*, p. 102.
 14. Stinchcomb, *Organizations*, p. 21.
 15. Kessel, *Moltke*, p. 439.
 16. When the US Department of Defense's Defense Intelligence Agency tried to estimate Iraqi casualties after the Gulf War of 1991, it admitted its numbers had an error factor of 50 per cent or more. John Mueller, 'The Perfect Enemy: Assessing the Gulf War', *Security Studies*, Vol. 5, No. 1 (autumn 1995), p. 87.
 17. Kessel, *Moltke*, pp. 412–19; Nielsen, 1864, p. 354; Neergaard, *Under Junigrundloven*, p. 1377.
 18. Wawro, *Austro-Prussian War*, p. 274.
 19. Howard, *Franco-Prussian War*, pp. 116, 127, 144, 181, 203, 222, 453; Alistair Horne says 300 000 for the French, 116 696 for the Germans in 1870. *The Fall of Paris* (New York, 1967), p. 268; Larry Addington in *Patterns of War* says 238 000 for the French, 133 750 for the Germans, p. 90.

20. Boehn, *Generalstabsgeschäfte*, pp. 53–62.
21. Martin van Creveld, *Fighting Power: German and US Army Performance, 1939–1945* (Wesport, Conn., 1982), pp. 3–6; Trevor N. Dupuy, *A Genius for War* (London, 1977), pp. 234–6.
22. Dupuy, *A Genius for War*, pp. 234–6.
23. An interesting place to begin is regimental histories. For example, Albert von Boguslawski served in the 3rd Lower Silesian Infantry Regiment No. 50 in each of the three German wars, starting as a first lieutenant and ending up a captain. The 50th IR fought at Lundby in the Danish War, at Königgrätz in 1866 against Austria and at Woerth in the French War. His *Geschichte des 3. Niederschlesischen Infanterie-Regiments Nr. 50* (Berlin, E. S. Mittler, 1887), lists the officers and many of the men and describes the nature of their combat in detail.
24. Cf. Douglas Foster, 'Bugged' in the *New York Times Magazine*, 31 October 1999, p. 68.
25. For this and what follows I am indebted to Chris C. Demchak, *Military Organizations, Complex Machines* (Ithaca, 1991), pp. 163–70.
26. Drucker, *Managing*, p. 91.

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Articles

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