

Rethinking Lines of Operations: Jomini's Contribution to the Conceptualization of Strategy in the Early Nineteenth Century

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Abstract

The changes in the conduct of military operations during the wars of the French Revolution were the basis for the theory of lines of operation formulated by Jomini in his *Traité de grande tactique*. The notion of lines of operation gained a new meaning that paved the way for the conceptualisation of the operational art and the transition from tactical debate to strategic thinking. Jomini's contribution to the development of strategic thought is considered from the dual perspective of the break with the military writers of the 18th century and the judgments made on the *Traité* by Napoleon and Clausewitz.

Keywords

lines of operation, strategy, Jomini

When Jomini published his *Traité de Grande Tactique* in 1805,¹ he was entirely unknown in European military circles. With no experience of war other than his service in the military administration of the Helvetic Republic, he was living in Paris with no professional prospect, hoping that his capacity for strategic thinking would be a gateway to a career in the French army. The self-taught, 26-year-old, was in fact convinced that he had a gift for strategy (*la protubérance stratégique*), just as others had a gift for maths.² The reception given to his work reinforced this conviction.

1 The only English translation of the work is the manuscript — anonymous — kept in the Library of Congress Manuscript Division (MMC-2105), with the title *Treatise on Military Tactics*. John Shy refers to this work as *Treatise on Major Military Operations*, but this is in fact the title given to later editions of the *Treatise*.

2 A. H. Jomini, *Recueil de souvenirs pour mes enfants* (Payerne: Société suisse d'études napoléoniennes, 2007), p. 30.

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Contrary to what Ferdinand Lecomte states in his biography of Jomini,³ Marshal Ney (1769–1815) did not read the manuscript of the *Treatise* with “eagerness”; he did, however, advance the funds that enabled Jomini to publish his work and agreed to bring him into his staff as a volunteer. The young man’s career was launched, and his reputation as a military writer was soon established. This is evidenced not by the apocryphal anecdote about Napoleon’s astonishment when he read passages from the *Treatise* after the Battle of Austerlitz (he probably only read it during his exile in St. Helena),⁴ but by the laudatory reviews published in the press at the time.⁵

The *Gazette de France* and the *Journal de l’Empire* highlighted the young author’s principle of concentration of forces (*système de concentration de M. de Jomini*), and it is indeed this strategic principle that has remained associated with Jomini’s name. This principle, however, was not, on the whole, original; Jomini himself acknowledged this when he indicated that he drew the idea from a maxim enunciated by Henry Lloyd (1718–1783) in his *History of the Late War in Germany*.⁶ Nor could Lloyd claim authorship of what he called a “general rule,” which other eighteenth century military authors had formulated before him, sometimes more clearly than he did. This was the case, for example, of the *Nouvelles constitutions militaires* written by the Count La Noue de Varo (1729–1761).⁷ The originality of Jomini’s argument lay in the fact that the principle of the concentration of forces was part of a new conception of the notion of lines of operations, which the *Journal général de la littérature de France* presented as his “new system of lines of operation.” The paradigm shift did not concern the principle of the concentration of forces, but the conditions of its actualization in the French revolutionary wars.

Lloyd, Tempelhof, Bülow, and the Lines of Operations

Jomini borrowed the concept of lines of operations from Lloyd, who apparently coined the term, before Georg Friedrich von Tempelhof (1737–1807) and Heinrich Dietrich von Bülow (1757–1807) appropriated and used it.⁸ These three authors had similar conceptions of what the line of operations was — a term which Lloyd used in the singular — i.e., as the line that linked the force with its army stores — which served as its “base of operations” (*Basis einer Operation* with Bülow) — and its objectives.

The line which unites these points, on which every army must act, is called The Line of Operation; and, of all those we have mentioned, it is the most important. For on the good or

3 F. Lecomte, *Le Général Jomini, sa vie et ses écrits* (Lausanne: Benda, 1888), p. 15.

4 It is difficult to have a definitive idea on this issue, see Napoleon, *On War*, ed. B. Colson, transl. G. Elliott (Oxford: Oxford University Press, 2015), p. 93.

5 *Gazette de France*, 3 June 1806, 24 June 1806 and 3 July 1806, *Journal de l’Empire*, 5 September 1806, *Journal général de la littérature de France*, IX (1806), p. 106, *Journal militaire*, January 1807, pp. 46–48.

6 A. H. Jomini, *Traité de grande tactique* (Paris: Magimel, 1805), I, pp. 533–534.

7 S. La Noue de Varo, *Nouvelles Constitutions militaires avec une tactique adaptée à leurs principes et démontrée en 20 planches* (Francfort: Knoch et Eslinger, 1760), II, p. 43.

8 *Geschichte des siebenjährigen Krieges in Deutschland zwischen dem Könige von Preussen und der Kaiserin Königin mit ihren Allirten vom General Lloyd*, transl. G. F. von Tempelhof (Berlin: Johann Friedrich Unger, 1783). A. H. D. von Bülow, *Geist des neuern Kriegssystems* (Hamburg: Benjamin Gottlieb Hofmann, 1799).

bad choice of this line the final event of the war chiefly depends. If it is ill chosen all your successes however brilliant, will, in the end, be found useless.⁹

In order to understand the break from the above-mentioned conception to that formulated by Jomini — and in so doing grasp the real issue at stake in what John Shy called the “obvious contradiction” in the fact that the young Swiss had taken as his model a military writer whom Napoleon considered pathetic — it is important to clarify the approach he took in his *Treatise*.¹⁰

The book used a doubly comparative angle. On the one hand, the author compared the operations of the Seven Years’ War with those of the French revolutionary wars in the famous chapter four of the second volume, which formed the core of the work. On the other hand, he discussed Lloyd’s and Tempelhof’s analyses of the operations of the Seven Years’ War and confronted them with the more recent theoretical study published by Bülow in his *Spirit of the Modern System of War*.¹¹

This approach had replaced the one he had used in a prior project, which consisted of writing a “theoretical course” on major military operations.¹² But Jomini quickly realized that his demonstrations could only be based on “lessons learned” (*les leçons de l’expérience*) and decided to ground his reflections on lines of operations in a comparative historical approach.¹³ Lloyd and Tempelhof provided the historical material needed for studying the campaigns of the Seven Years’ War, while Bülow provided the reasoning from which — and against which — Jomini drew to develop his own ideas (*il [Bülow] m’a beaucoup instruit, même en sens inverse de ses opinions*). Lloyd also convinced him of the existence of “simple and incontrovertible” principles which should govern the art of war, with its combinations of strategies and tactics. In this regard, John Shy is perfectly right, but the essential point is not in this general agreement, but in the dissension over the lines of operations. To be convinced of this, it is necessary to refer to chapter four of the second volume of the *Treatise*, in which Jomini states that his ideas differ greatly from those of the authors who previously wrote about the lines of operations, and he explains how they differ:

Glancing over these different combinations, a wide difference will be observed between our views and those of the authors who have written on this subject up to our day. The fact is, that these lines have been considered merely in their material relations. Lloyd and Bülow have only attached to them the importance which pertains to the magazines and depots of an army.¹⁴

9 H. Lloyd, *The History of the Late War in Germany, between the King of Prussia and the Empress of Germany and her Allies* (London: S. Hooper, 1781), II, p. 134.

10 J. Shy, “Jomini”, in *Makers of Modern Strategy*, ed. P. Paret (Princeton: Princeton University Press, 1986), p. 149.

11 Bülow, *Geist des neuern Kriegssystemes*.

12 Prospectus de souscription pour un cours théorique et pratique de grande tactique, par H. Jomini, chef de bataillon dans les troupes suisses (imprimé, 4 pages), n.d., Vincennes, Service Historique de la Défense, GR 1 M 2041 (T).

13 Jomini, *Traité de grande tactique*, I, p. 7.

14 Jomini, *Traité de grande tactique*, II, p. 166.

Here “material” is to be understood in the proper sense of the word, i.e., what is related to the *logistics* of the army, to use another notion that Jomini later conceptualized. In the *Treatise*, the notion of lines of operations changes in meaning and scope, not because Jomini reasoned better than Lloyd and Bülow on an object that had remained constant, but because that object had evolved significantly during the French revolutionary wars.

“Tyranny of Stores” and “Processional Warfare”

Lloyd and Bülow’s conceptions were conditioned by the constraints inherent in the wars of the *Ancien Régime* and more specifically, by what Jean-Philippe Cénat called the “tyranny of stores.”¹⁵ Lloyd and Bülow could not have given any other meaning to the notion of lines of operation because the nature of military operations under the *Ancien Régime* shaped this logistical meaning; Bülow expresses this clearly when he writes that “properly speaking, it is the convoys that form these lines [of operations].” The whole reasoning was based on the limiting factor of supply and ammunition provisioning, the armies’ dependence on their supply magazines being the real anchor point of the reasoning. Bülow expressed this most clearly with an anatomical metaphor:

The magazines are the heart which cannot be injured, without that body of men, whom we denominate an army, being annihilated. The lines of convoy are the muscles of the military body, which would become paralytic, if they were cut off. But, as convoys come only on the sides and from behind, it follows, that the great object of the operations, whether in offensive or defensive war, is to keep the rear and flanks of an army inviolate. Another consequence of these principle is, that fighting is to be avoided, and particularly in the front.¹⁶

Although the author, who was writing in the early years of the French revolutionary wars, had been able to discern certain changes in tactics, he was unaware of a considerable change that was going to radically alter the conduct of operations in the theatre of war and, more generally, military thinking. To understand the scope of this change, it is important to specify the conditions that enabled armies, at the turn of the eighteenth and nineteenth centuries, to free themselves from the “tyranny of stores” and to transition into movement warfare.

Under the *Ancien Régime* the armies practiced a “processional warfare,” — a phrase coined by General Henri Ménard.¹⁷ The author uses the term in a slightly different sense from that used by Randolph Cooper or by Dierk Walter.¹⁸ It is to be understood as it was understood in the eighteenth century military terminology, as an extension of the notion

15 J.-P. Cénat, “De la guerre de siège à la guerre de mouvement: une révolution logistique à l’époque de la Révolution et de l’Empire?”, *Annales historiques de la Révolution française*, 2007, 348, pp. 101–115.

16 A. H. D. von Bülow, *The Spirit of the Modern System of War*, transl. C. Malorti de Martemont (London: T. Egerton, 1806), pp. 17, 81–82.

17 H. Ménard, “Préface”, in J. de Guibert, *Écrits militaires, 1772–1790* (Paris: Éditions Nation Armée, 1977), pp. 24–25.

18 R. Cooper, “Culture, Combat, and Colonialism in Eighteenth-and Nineteenth-Century India”, *The International History Review*, 2005, 27, p. 541. D. Walter, *Colonial Violence: European Empires and the Use of Force* (Oxford: Oxford University Press, 2017), pp. 20–31.

of “processional movement”, which referred to a shift in direction that enabled a column to form into battle order (*une conversion*). The notion connoted slowness, most explicitly in the *Encyclopédie méthodique*, which mentioned the “processional slowness” (*lenteur processionnelle*) of this movement.¹⁹

According to Ménard, the army marched, during a campaign, in a single “block” on the theatre of war; it was an *armée monolithe*.²⁰ This monolithic system had several purposes. The first objective was to preserve the army from the danger associated with troop dispersion, as strong detachments of infantry, cavalry or artillery were doomed to destruction if they encountered an enemy army that had remained a homogeneous block. Secondly, it responded to the need to not have the army’s baggage taken away; the marquis de Feuquière (1648–1711) insisted that the “columns of large and small baggage be covered on the march and enclosed [*renfermées*] by the columns of troops so that they are safe.”²¹ Thirdly, it gave the army the time it needed to get into battle order, which Jacques-Antoine-Hippolyte, comte de Guibert (1743–1790) considered “infinite” and which forced it to take its order of battle “very far from the enemy.”²² This resulted in major operational constraints: very slow progression, in short stages; the army’s dependence on its stores and convoys (as there was not enough food and fodder in the regions the army marched through to feed all the troops and animals), and a lack of manoeuvring fluidity; fluidity without which an army did not have the capacity to surprise the enemy and force it into combat.

Guibert perfectly identified the solution to the problem: to move an army with ease, it was enough to divide it into several corps that could manoeuvre more quickly and in better order than an indivisible mass could. The creation of subdivisions within the army made it possible not only to facilitate marches, but also to accelerate the movements that would enable the army to take its order of battle. At the same time, Guibert recommended relieving the army of its impedimenta and rationalizing its supply system to make it more manoeuvrable.²³

Guibert’s relevance as a military writer has been rightly underlined by Jean Colin, Robert Quimby (who drew much of his inspiration from Colin) or, more recently, by Jonathan Abel in his biography of Guibert.²⁴ While Guibert’s influence in matters of battle tactics was indisputable, his influence on questions of operational art was not as great as it has been believed to be. Jomini was quite right when he noted that Guibert had written an excellent chapter on marches that touched on the question of strategic movements, but that his work “did not realize what this

19 *Encyclopédie méthodique. Art militaire* (Paris: Agasse, 1797), IV, p. 661.

20 B. Druène, “Les origines de l’organisation divisionnaire”, *Carnet de la Sabretache*, 1962, 424, p. 716.

21 *Mémoires de M. le Marquis de Feuquières* (Paris: Rollin, 1737), p. 221.

22 J. de Guibert, *Essai général de tactique* (Londres: Les Libraires Associés, 1772), I, p. 183, II, pp. 74–75.

23 Guibert, *Essai général de tactique*, II, pp. 27–28, 337–338.

24 J. Colin, *L’Infanterie au XVIII^e siècle. La tactique* (Paris: Berger-Levrault, 1907). R. S. Quimby, *The Background of Napoleonic Warfare* (New York: Columbia University Press, 1956). J. Abel, *Guibert: Father of Napoleon’s Grande Armée* (Norman: Oklahoma University Press, 2016).

chapter promised.”²⁵ Not only are Guibert’s analyses focused on deployments designed to put the army in order of battle, but the important first three chapters of the second volume of his *Essai général de tactique* — precisely devoted to the marches of armies — are not without tension with his other considerations about the need to not “fragment” (*morceler*) the army.²⁶

Guibert returned to the issue of army fragmentation in his *Défense du système de guerre moderne*. The formation of separate corps was clearly presented as a perilous practice that went against the principles of “la grande Tactique moderne.” While he did not rule out the possibility that circumstances might require that large detached corps be formed, he ruled out that this should be done on a permanent basis and refused “above all” that these corps should have their own staff.²⁷ When Guibert talks about divisions, he has in mind an arrangement of troops that corresponds to his “columns” manoeuvring to get into order of battle and not really with what an army division would be during the French Revolution and the Empire. We can therefore say, in line with Jonathan Abel, that Guibert’s tactical conceptions “created a foundation on which the operational doctrine could be built,”²⁸ but it would be imprudent to make Guibert the creator of such a doctrine. From the *Essai* to the *Défense*, his thought is coherent.²⁹ Guibert is the advocate of the *batailles manoeuvrières*,³⁰ those of Frederick II (1712–1786), and not really the prophet of the strategic movements of forces.

The French army’s divisional system was, in the eighteenth century, in its conception phase and did not take full effect until the revolutionary period. As Steven Ross pointed out, the emergence of this system is a complex problem, one which the polysemy of the notion of “division” during the *Ancient Régime* makes difficult to understand.³¹ Originally, a division referred to a fraction of a battalion or regiment that usually marched in six files.³² Later, the term was also used to designate any subdivision of the army whatever its size. The danger of an anachronistic understanding of the term as used in the eighteenth century is made apparent in a quote from Joly de Maizeroy’s *Théorie de la guerre*:

From all these parts [battalions and squadrons] different divisions are formed which are called brigades. Thus, the infantry corps is separated into several brigades, and the same for the cavalry; when they are numerous, a large division is made up of several brigades: the whole army is then divided into large divisions and these into brigades. Battalions and squadrons are therefore the smallest divisions of the army corps in relation to the grand tactic.³³

25 A. H. Jomini, *Précis de l’art de la guerre* (Paris: Tanera, 1855), p. 14.

26 Guibert, *Essai général de tactique*, II, pp. 11–27, 128–129.

27 J. de Guibert, *Défense du système de guerre moderne* (Neuchâtel, 1779), II, pp. 150–151.

28 Abel, *Guibert*, p. 182.

29 J. Osman, “Guibert vs. Guibert: Competing Notions in the *Essai général de tactique* and the *Défense du système de guerre moderne*”, *Journal of Military History*, 2019, 83–1, p. 64.

30 Guibert, *Défense*, II, p. 148.

31 S. Ross, “The development of the combat division in Eighteenth-Century French armies”, *French Historical Studies*, 1965, 4, p. 84.

32 *Dictionnaire militaire ou recueil alphabétique de tous les termes propres à l’Art de la guerre* (Paris: David, 1743), p. 150.

33 P. G. Joly de Maizeroy, *Théorie de la guerre* (Lausanne, 1777), pp. 4–5.

In addition to these different uses of the term “division,” the latter came to refer to an administrative unit from 1776 onwards. Let us only keep in mind and clarify the distinction made by Steven Ross between two important senses of the term “division,” namely “an administrative unit” and “a combat unit” — a meaning that emerged during the Revolution.

First, the emergence of the notion “combat division” does not date from the royal ordinance of 17 March 1788 that followed from the logic of the ordinance of 25 March 1776, which had instituted sixteen administrative divisions (the number of administrative divisions was increased to twenty-one in 1788). Each division was stationed (*emplacée*) in a specific province, with the brigade remaining the operational unit on the basis of which the army was organized.³⁴ Secondly, it is important to understand that the question of the subdivision of the army was related to that of the combination of the three arms, infantry, cavalry, and artillery. Thus, the divisional system adopted by Marshal de Broglie (1718–1804) during the War of the Austrian Succession and the Seven Years’ War did not — as a rule — include mixed arms; moreover, these divisions had no operational function, since their primary purpose was to facilitate the conduct of the army’s march.³⁵ As Claus Telp pointed out, these divisions no longer had any function on the battlefield, when Marshal de Broglie’s troops changed back to their traditional configuration.³⁶ There was, however, one notable exception during the War of the Austrian Succession which deserves our full attention in that the initiative taken by Marshal de Belle-Isle (1684–1761) portended what all-arms divisions in the French army would be in the future.

Moving his army from Prague to Egra (now Cheb in the Czech Republic) in November 1742, Belle-Isle divided his army into five divisions, each consisting of an infantry brigade of 2,000 men, two cavalry brigades of 500 horses and an artillery brigade of six pieces. This arrangement responded to the country’s configuration, which prevented the army from advancing in more than one column, but it also provided the best possibility to defend the retreat against enemy attacks:

I was always in a position to face in force [*faire face en force*] at the head, at the tail and along my column, because going to the right or to the left according to the side where the enemy appeared, I would always be in battle [*je me trouverais toujours en bataille*], my mixed arms, infantry, cavalry and cannon, covering my crews that I had to put behind.³⁷

Finally, it is important to consider the initiatives of Marshal de Broglie, in particular his *Instruction* of 1760, as a first step towards divisional organization. This instruction

34 *Ordonnance du Roi portant règlement sur le commandement dans les provinces ainsi que sur la division, l’organisation, la police, la discipline et l’administration générale de l’armée. Du 17 mars 1788* (Paris: Imprimerie royale, 1778), see section III.

35 *Instruction pour chaque officier-général conduisant une division, 26 juin 1743, in Campagne de Monsieur le Maréchal de Broglie, en Bohême et en Bavière* (Amsterdam: M.M. Rey, 1773), IX, pp. 237–240. *Instruction pour l’armée du Roi, commandée par Mr le maréchal duc de Broglie* (Francfort: Van Duren, 1760).

36 C. Telp, *The Evolution of Operational Art, 1740–1813: From Frederick the Great to Napoleon* (London: Routledge, 2004), p. 22.

37 Marshal of Belle-Isle to a King’s minister, 8 January 1743, in *Mémoires du duc de Luynes sur la cour de Louis XV* (Paris: Didot, 1860), IV, p. 385.

gave the division its *autonomie* and its *personnalité*, according to the expression of colonel Druène; but it is also important to note that these divisions still operated within a monolithic army.³⁸

The Divisional System in the Armies of the French Revolution

The division only became a tactical combat unit again with the reorganization of the revolutionary army in 1793. The decree of the National Convention of 21 February 1793 relating to the organization of the army provided the initial impetus for this process. Articles 2 of its Title III and VIII specified that each division was composed of four half-brigades (with a workforce of 2,437 men each, or a total of 9,748), which in turn were created by amalgamating a battalion of line regiment and two battalions of “national volunteers.” These new arrangements (known as the *premier amalgame*) had an impact both on the moral forces — to use the expression coined by Clausewitz — of the army and on the manners in which troops were engaged in combat.

In his *Rapport sur l'organisation de l'armée*, Representative L. A. Dubois-Crancé (1747–1814) highlighted the advantage that would arise from the amalgamation — he refused to use the word “fusion” — of both types of troops: the troops of the line would benefit from the revolutionary “spirit” conveyed by the volunteers, while the latter would benefit from the experience of the former.³⁹ Properly employed, these troops could judiciously complement each other; the impetuosity of some made it possible to jostle the enemy, while the tactical manoeuvrability and discipline of others made it possible to combine various movements on the battlefield. While the volunteers had the “sense of the offensive,” the line troops were capable of delivering the “decisive blow.” The combination of the two elements disconcerted the enemy generals who, for their part, used “stiffed manoeuvres” (*manoeuvres compassées*).⁴⁰

The decree of 21 February 1793 also stipulated that six 4-pounders (83 mm) would be attached to each half-brigade. In theory, therefore, the field artillery of each division was made up of twenty-four guns in total. Each army of the Republic also possessed park artillery whose number of pieces was equal to its field artillery, but of different calibres.⁴¹ There was no provision explicitly attributing this park artillery to the divisions, just like the cavalry units. On this point, the secondary literature lacks precision, and it is necessary to refer to the history of cavalry regiments and to the armies’ situation reports to understand that the creation of all-arms divisions resulted from the initiatives of the generals commanding the armies as much as from the provisions of the decree of 21 February 1793.

This decree did not transform the army uniformly, as the divisions of the French armies varied in size and composition throughout the wars of the Revolution. In

38 B. Druène, “Les origines de l’organisation divisionnaire”, *Carnet de la Sabretache*, 1962, 425, pp. 793, 799.

39 *Gazette nationale*, 9 February 1793.

40 A. C. Gérôme, *Essai historique sur la tactique de l’infanterie* (Paris: Lavauzelle, 1903), pp. 158–159.

41 A. de Lespinasse, *Essai sur l’organisation de l’arme de l’artillerie* (Paris: Magimel, 1800), p. 6.

October 1793, the Ferrey (1723–1806) division, in the army of the Rhine, numbered 9,311 men, including only two cavalry squadrons (160 horses). In December of the same year, the Ferino (1747–1816) division, also in the Army of the Rhine, had a strength of 8,171 men, but comprised thirteen cavalry squadrons (1,281 horses) and a mounted artillery battery (74 men).⁴² In the summer of 1794, the Taponier (1749–1831) division of the Moselle army numbered 12,670 men, including four cavalry squadrons (502 horses). Cavalry regiments could either be attached, in whole or in part, to an infantry division, or they formed a cavalry reserve, as in the army of the Moselle, where the 1st, 4th, 14th and 17th dragoon regiments formed a “dragoon division” at the beginning of 1793, before two of these regiments were transferred to the Army of the Rhine and the 14th regiment was attached to the Taponier division.⁴³ The strength and firepower of a division could thus vary according to circumstances and the choices made by the general-in-chief. In 1795, the Taponier division only comprised 6,603 men, including four cavalry squadrons (385 horses), but had reinforced artillery capability: in addition to the gunners of the half-brigades (132 men), it had several artillery detachments representing almost 400 men.⁴⁴

The attachment of artillery and cavalry in the divisions did not meet with unanimous approval. A decree of 7 May 1795 halved the number of 4-pounder guns in the half-brigades,⁴⁵ while generals such as Hoche (1768–1797) decided to create mass cavalry formations independent of the infantry divisions to increase their effectiveness. When he took command of the army of Sambre-et-Meuse at the beginning of 1797, he formed three cavalry divisions: a division of mounted chasseurs; a second of hussars; and a third of dragoons to which was added a reserve division of heavy cavalry. This reorganisation aimed, in the words of Hoche, to compensate for the “fragmentation” of the cavalry which, “more unified,” would prove more efficient.⁴⁶ For Gouvion Saint-Cyr (1764–1830), a supporter of the all-arms division system, such provisions were “bizarre” and offered less flexibility in the use of the cavalry.⁴⁷ Napoleon, too, was in favour of using cavalry *en masse*, without being attached to infantry divisions; however, his views were formed in a context where the scale of operations had changed. In 1800, he recommended to Moreau (1763–1813) “that there should be as little cavalry as possible attached to a division, at most one regiment of hussars or chasseurs”; at the same time, he outlined, in his instructions to Berthier (1753–1815), the organization into *corps d’armée* of the reserve army he had decided to set up.⁴⁸ As John Weinzierl pointed out, this innovation was crucial from the point of view of

42 L. de Gouvion Saint-Cyr, *Mémoires sur les campagnes des armées du Rhin et de Rhin-et-Moselle* (Paris: Anselin, 1829), I, annexes 11 and 18.

43 M. Menuau, *Historique du 14^e régiment de dragons* (Paris: Boussoud, 1889), pp. 91–100.

44 Gouvion Saint-Cyr, *Mémoires sur les campagnes des armées du Rhin et de Rhin-et-Moselle*, II, annexe 101.

45 Décret du 18 floréal sur l’arme de l’artillerie, *Gazette nationale*, 11 mai 1795.

46 M. Sautai, *La cavalerie sous le Directoire* (Paris: Berger-Levrault, 1910), p. 381.

47 Gouvion Saint-Cyr, *Mémoires sur les campagnes des armées du Rhin et de Rhin-et-Moselle*, IV, pp. 152–153.

48 Napoléon to Berthier, 25 January 1800; Napoléon to Moreau, 15 February 1800, http://www.histoire-empire.org/correspondance_de_napoleon/

operational art in that it made it possible to establish a “more mobile and flexible system of warfare.”⁴⁹

The all-arms *corps d'armée* extended the logic of the all-arms division and offered the same advantages and potential for armies with larger numbers of troops. Thus, Napoleon had brought about a “new development of the ideas from which originated the divisional organization.”⁵⁰ Both enjoyed a degree of operational autonomy that allowed them to fight separately while awaiting the support of most of its forces. The splitting of the army into divisions also enabled the troops to march separately, which facilitated access to fodder for horses and food supplies for the troops, and thus reduced their dependence on army stores. The all-arms division or all-arms *corps d'armée* also offered remarkable manoeuvrability, facilitated the movements of the army's main units, increased their speed, and made it possible to maintain a wide range of operational combinations and thus successfully undertake the decisive engagement.

From the *amalgame* of 1793 to the creation of the army corps by Napoleon at the beginning of the nineteenth century, the evolution of the divisional system was neither a smooth nor a linear process. The reorganization of the army was never entirely effective. The emulation between the volunteers and line troops was not, as Dubois-Crancé had expected, systematic and therefore did not always benefit the half-brigades; their artillery could not compete with park artillery, and the all arms divisions were not systematically high-performing tactical units. But, in the context of this highly empirical process, the French army gained in mobility and manoeuvring capacity by providing those who could exploit it, a new potential in the field of operational art. According to Napoleon, there was also a moral factor of mobility, one which resulted from the combination of speed (of manoeuvres) and mass (of troops):

The strength of an army, like the quantity of movements in mechanics, is estimated by the mass multiplied by quickness. This march [from the Po to the Adige in 1796], instead of weakening the army, increased its resources and its courage [*moral*], and added to its means of conquest.⁵¹

In short, the time of the “processional” wars of the *Ancien Régime* was over, and the time of great strategic manoeuvres and operational art was beginning.

Jomini and the Lines of Operations

Although Jomini did not describe the transformation process of the French army in detail, he found that it had already started when he was employed at the War Ministry of the Helvetic Republic. The passage in his memoirs in which he mentions this episode is

49 J. Weinzierl, “The second Italian campaign,” in *Napoleon and the Operational Art of War: Essays in Honor of Donald D. Horward*, ed. M. Leggiere (Boston: Brill, 2016), p. 119.

50 M. Lanty, *Conférence sur la tactique des trois armes dans la division* (Paris: Dumaine, 1869), p. 8.

51 C. T. Montholon, *Memoirs of the History of France during the Reign of Napoléon* (London: Colburn, 1824), IV, p. 299. The English translation is not excellent. Napoleon evoked the army's morale — not its courage — in a sense that should be compared to Clausewitz's moral forces.

worth quoting here, as it explains one of the motivations behind his comparative approach to the Seven Years' War and the campaigns of the French Revolution:

Sent on a mission to the army after the evacuation from Zurich [in June 1799], I travelled through the posts from Bruck to the Albis. An unbelievable feeling came over me on this occasion. Full of the king's famous marching order at Leuthen, and the advantage he had of acting *en masse* on one point, I expected to see Masséna's beautiful army lined up in battle; I travelled four leagues beyond Baden, encountering only scattered regiments here and there; I understood that great innovations had been made in the art of war, but my mind doubted whether these changes were an improvement or a retrograde step; I proposed to examine this important question.⁵²

Rather than the organizational origins of these innovations, it was their operational consequences that caught his attention a few years later. The first edition of the *Treatise* sought to answer this question by giving the notion of line of operations a new interpretation that broke from that of Lloyd and Bülow: it was no longer a supply line, but an authentic strategic line of manoeuvre or, to use the *Treatise's* expression, "lines of operations considered as manoeuvres" or even more simply, "lines of manoeuvres" (*lignes-manoevres*). It is plausible that the phrase of *ligne-manoevre* was inspired from the notion of *marche-manoevre* used by Guibert, although Jomini did not say anything in this regard. But these concepts differ in their scale of analysis. For Guibert, the *marche-manoevre* was different to the *marche de route* and was defined as "a march conducted within range of the enemy";⁵³ in other words, it is a tactical manoeuvre that is part of the order of battle. For Jomini, the line of operation was a strategic movement in that it was deployed over the entire theatre of war.

More precisely, the definition of a line of manoeuvres was one of the two meanings ascribed, in the *Treatise*, to the concept of line of operations. Striving to always base his reasoning on precise terminology, Jomini made a distinction between "territorial lines" and "lines of manoeuvre."⁵⁴ The former refers to natural axes that facilitate or hinder communication (valleys, plains, mountain ranges, rivers), as well as structures built for one purpose or another (roads, bridges, entrenched camps, fortresses built on a frontier). In a way, these territorial lines constitute the equivalent of "strategic geographical points," — a concept later introduced in the *Précis de l'art de la guerre (The Art of War)* — in that they are permanent physical factors associated with permanent constraints or opportunities, and therefore shape the configuration of a theatre of war. As for the lines of manoeuvre, they are, as perfectly summarized by Jean-Jacques Langendorf, "the expression of the will of the general-in-chief."⁵⁵ In other words, they are the manifestation of a strategic option based on the evaluation of several factors: the objective assigned to the operations; the geographical configuration of the theatre of war; and the movements of the enemy.

All things considered, and notwithstanding the dual definition provided in the *Treatise*, the lines of operations *are* the lines of strategic manoeuvres insofar as the

52 Jomini, *Recueil de souvenirs*, p. 33.

53 Guibert, *Essai général de tactique*, II, pp. 24–25.

54 Jomini, *Traité de grande tactique*, II, pp. 162–164.

55 J.-J. Langendorf, *Faire la guerre. Antoine Henri Jomini* (Genève: Georg, 2004), II, p. 209.

territorial lines only form the outline of potential operations, such as they were conceived by the general on the basis of his reading of the map. The choice of the term *ligne-manoevre* was not as inappropriate as some critics suggested.⁵⁶ It marked a break from Lloyd and Bülow's conceptions of lines of operations, particularly because it expressed a shift in focus from the base of operations to the front line. According to Lloyd, the whole question of the line of operations boiled down to that of the distance between the base and the objective, whereas Bülow believed that the focus should be on the angle formed by two lines drawn between the base of operations and the objective. With Jomini, the focus shifts towards the *front des opérations*. Although the term does not appear explicitly in the first edition of the *Treatise*, the idea it refers to is at the heart of the reflection, since it concerns the strategic combinations that can be envisaged in the space separating the two opposing armies.

The relationship between the opposing forces is the basis for the nomenclature of the lines of operation proposed by Jomini. *Simple lines of operations* are formed by an army that operates a strategic movement without splitting up into several "large" corps to confront the enemy. *Double lines of operations* are formed by two armies that operate separately, whether they act towards the same or different objectives. *Interior lines of operations* are formed by an army whose corps coordinate their movements in order to operate against several opposing lines, preventing the enemy from concentrating its masses. As for the *exterior lines of operations*, they are formed by an army that operates simultaneously on several portions of the opponent's line of operations and thus splits its forces and positions them off-centre in relation to enemy troops. The nomenclature provided in the *Treatise*, and which was further expanded in the *Art of War*, contains other categories of lines of operations, which makes the concept unnecessarily complicated.

This nomenclature was, in fact, not really a typology. Rather, it was a series of concepts for characterizing the different operational configurations through which the principle of concentration of forces could be implemented in the context of a strategic manoeuvre. Without further detailing this nomenclature, it is interesting to note the difference between descriptive (concentric lines, divergent lines, deep lines, accidental lines...) and prescriptive concepts. Among the latter, interior lines and simple lines correspond to the appropriate strategic combinations to achieve the principle of concentration of forces:

Simple lines and interior lines are intended to put into action, at the most important point and by means of strategic movements, a greater number of divisions and consequently a greater mass than the enemy.⁵⁷

The simple, interior lines obviously did not imply a return to the indivisible army of the *Ancien Régime*. They typified a double relationship: the relationship between the different corps of one army (in a situation of rapid concentration) and that between these corps and the enemy's army (in a situation of manoeuvring centrally in relation to peripheral masses). In the first edition of the *Treatise*, however, the issue was not unambiguous,

56 This is the case of Guillaume de Vaudoncourt (1772–1845) in an issue of the *Journal des sciences militaires*, 1826, 3, p. 419.

57 Jomini, *Traité de grande tactique*, II, p. 204.

as Jomini did not sufficiently explain the difference between an undivided army and an army divided into several corps. The ambiguity was only eliminated in the *Précis*, in which the author indicates that the simple lines concern corps of an army manoeuvring on the same line of operations, even if they progress separately on different paths, as long as it is in the same direction and they can be brought together within a reasonable period of time, i.e., one or two days.⁵⁸

As far as the lines of operations are concerned, everything essential was said as early as 1805. However, Jomini made several changes to the formulation of his conceptions regarding the lines of operations. Let us consider two of the most significant. First of all, Jomini abandoned, in the *Précis*, the notion of *lignes-manoevres*; more precisely, he redefined it in such an ambiguous way that it confused his readers. This was the case in the 1862 English translation by Mendell and Craighill, who ignored the paragraphs in which Jomini explained what prompted him to abandon the “figurative sense” of the concept and added the term “manoeuvre-lines” into a passage of the text, the French version of which does not contain it.⁵⁹ The notion that replaces *lignes-manoevres* in the *Précis* is “strategic lines of manoeuvres” or, more simply, “strategic lines,” as indicated by the title of article 22 of the work. This substitution was part of a terminological clarification effort that met with mixed success. Jomini proposed a plethora of notions and definitions in an attempt to clarify his argument, but by doing so actually added confusion. Henceforth, the strategic lines “differ essentially from the lines of operations” in that each of the two notions referred to a different idea of strategic manoeuvre. With the former, the focus was on the choice of direction for a specific manoeuvre based on the immediate options available to the senior general. The latter, on the other hand, offered a broader perspective on movement warfare across the entire theatre of war, denoting the general direction of operations. Jomini emphasized this difference to counter his critics’ arguments and describe specific manoeuvres in detail. These differences between the various terms also complicated the reasoning unnecessarily and brought confusion to the meaning that had been initially ascribed — in the 1805 *Treatise* — to the concept of line of operations.

The second change brought about by the *Précis* truly enhanced Jomini’s perspective on lines of operations. Articles 24 and 25 focused respectively on the changes in warfare systems at the turn of the eighteenth and nineteenth centuries and on the depots of supplies. Without referring to the *amalgame* of 1793 or to the divisional system, Jomini looked at the changes in the art of war that enabled him to redefine the notion of lines of operations. The opposition between the “old system of wars of position” and the “modern system of marches” signalled the transformation of the processional wars of the *Ancien Régime* into wars of movement. Questioning the limitations of the second system, the author noted that while Napoleon had brought it to its apogee, he had also given it an excessive dimension with the formation of gigantic armies forced to live in countries they devastated. In the same vein, the article on stores raised the question of what conditions enabled an army, according to its size and the theatre of operations, to maintain its capacity of movement while ensuring that it had an adequate supply of

58 Jomini, *Précis de l’art de la guerre*, pp. 116–117.

59 A. H. Jomini, *The Art of War* (Philadelphia: Lippincott, 1862), p. 103.

equipment, after having noted that, during the wars of the French Revolution, “necessity led to the disregard [*mépris*] of the stores.”⁶⁰

While examining more closely the question of the link between the strategic movements of armies and their material constraints, the *Précis* redefined another concept that later took on considerable significance, that of logistics, which is the subject of Article 41 of the book. The result was this threefold definition of the main branches of the art of war: “Strategy decides where to act; logistics brings the troops to this point; tactics decides the manner of execution and the employment of the troops.”⁶¹

Clausewitz and Napoleon on Jomini

In order to appreciate Jomini’s contribution to the renewal of military thinking, it is important to situate the first edition of the *Treatise* in the context of its reception. As aforementioned, the work was favourably received by the press. Let us now examine the two most authoritative opinions: that of the greatest military thinker of the nineteenth century, Clausewitz; and that of the greatest strategist of the period, Napoleon.

Before harshly criticizing Jomini, without always naming him, in *On War*, Clausewitz had made a more measured assessment in his ‘Notes on Strategy’ of 1808. While doubting the “eminent value” that Jomini attached to his own theses, Clausewitz sees a clear break with Bülow’s theses and considered that the Swiss reasoned and demonstrated infinitely better (*unendlich viel solider räsoniert und beweist*) than the Prussian. The problem was that Jomini’s “abstractions” were “rather thin thoughts” (*ein paar mageren Gedanken*) that did not measure up to the military genius of Frederic II or the true spirit of war (*den wahren Geist des Krieges*).⁶² In other words, although Clausewitz acknowledged that Jomini’s work represented a break from previous theories on war, he himself wanted to break with Jomini’s reflections.

As is well known, Clausewitz made little use of the notion of lines of operations in *On War*, and this was undoubtedly perfectly intentional. The first two occurrences of the concept of line of operation liken the latter to a geometric factor (*das geometrische Element*); Clausewitz uses this as an angle from which to challenge the validity of the specious approach of the recent theories (*neuerer Theorie*) which claim to raise the strategy to a more scientific level (*wissenschaftlicher zu machen*). In his third mention of the notion — an inadvertency by Clausewitz? — he presents it as being almost synonymous with that of a line of communication. Clausewitz favoured the latter notion (*Verbindungsline*) which he used to mean both a logistical axis and a line of retreat. The author of *On War*, however, could not avoid dealing with the question of interior lines, which occurs nine times; among the nine occurrences of the term, one expresses the substance of Clausewitz’s thought and rephrases the idea set forth in the 1808 notes:

60 Jomini, *Précis de l’art de la guerre*, p. 162.

61 In the original version, the formula appears in a footnote. Mendell and Craighill have traced it in the main text, but with an approximation in the translation, since Jomini mentions the “tactic” and not the “grand tactic.” Jomini, *The Art of War*, p. 69.

62 C. von Clausewitz, *Strategie aus dem Jahre 1804 mit Zusätzen von 1808 und 1809* (Hamburg: Hanseat Verl-Anst, 1941), pp. 71–72.

As a reaction to that fallacy [the superior effectiveness of enveloping positions], another geometrical principle was then exalted, that of the so-called interior lines. Even though this tenet rests on a solid ground — on the fact that the engagement is the only effective means in war — its purely geometrical character, still makes it another lopsided principle that could never govern a real situation.⁶³

In this case, Clausewitz was playing with words. It was Bülow's conception of lines of operations — and not Jomini's notion of interior lines — that could be characterized as purely geometrical (*seiner bloß geometrischen Natur*). But Clausewitz accepted the sound foundation on which the notion was based. Moreover, the immediate continuation of the text contains the answer to the question — much debated and highly controversial — of the divergences and convergences between the two authors by proposing a distinction between the analytical and synthetic components of Jomini's theories: the analytical component corresponds to a real heuristic progress (*als Fortschritte in dem Gebiet der Wahrheit*), while the second was quite unusable (*ganz unbrauchbar*).⁶⁴ In other words, Clausewitz argued *against* Jomini when the latter enunciated precepts and rules (the synthetic component), but his reasoning followed from Jomini's theory when the latter reconsidered the conditions for the decisive manoeuvre in the context of the war of movement.

Napoleon's view was more nuanced than Clausewitz' on the question of the principles of the art of war. While in St. Helena, he criticized Jomini for “establishing principles above all,” arguing that, on the contrary, “genius acts by inspiration”. He conceded, however, that principles “must be regarded as axes to which a curve is related” and that it was “already something that, on a particular occasion, one thinks one is deviating from principles”;⁶⁵ in quoting Napoleon, Jay Luvaas omitted to specify that the Emperor was expressing his view on Jomini's *Treatise*.⁶⁶ Napoleon had also found in Jomini's *Treatise*, the confirmation that he (Napoleon himself) had proved to be “well trained in the true principles of war” when he adopted the measures thanks to which his march on Turin in 1796 had been successful.⁶⁷

More generally, Napoleon noted Jomini's ability to understand the importance of the alternating dispersion and concentration of forces in his system of operations:

Jomini observed very well when he said that I always marched alone — so as to live — but that I arrived quickly to be always reunited on the day of a battle. So, in all battles I was reunited; that's what made me special.⁶⁸

Napoleon also emphasized Jomini's ability to “understand” and “develop” his offensive movements on the enemy's rear and considered the *Treatise* as “one of the most important of all [works] that has been published relative to these

63 C. von Clausewitz, *On War* (Princeton: Princeton University Press, 2008), pp. 135–136.

64 C. von Clausewitz, *Hinterlassene Werke*, I (Berlin: Ferdinand Dümmler, 1832), p. 118.

65 Napoleon, *On War*, p. 103.

66 Jay Luvaas, “Student as teacher”: Clausewitz on Frederick the Great and Napoléon”, in *Clausewitz and Modern Strategy*, ed. M. I. Handel (Abingdon: Frank Cass, 1986), p. 167.

67 H. G. Bertrand, *Cahiers de Sainte-Hélène, 1818–1819* (Paris: Albin Michel, 1959), p. 239.

68 Bertrand, *Cahiers de Sainte-Hélène, 1818–1819*, p. 176.

subjects.”⁶⁹ Unfortunately, the *exilé* of St. Helena did not comment precisely on Jomini’s lines of operations theory. He himself had previously used this notion sporadically, but in widely varying meanings. It may have had a logistical meaning, close to that ascribed by Lloyd, when the Emperor indicated to Berthier that the ill-fated men of the *armée de Portugal* were to be sent to Madrid, the city constituting that army’s line of operations.⁷⁰ He used it in a more operational sense when he ordered General Lauriston (1768–1828), positioned in Magdeburg, to take his line of operations on Wesel in case the enemy advanced on Dresden.⁷¹ But the notion could also be used in confusing contexts, such as when Napoleon indicated to his brother Joseph (1768–1844) that a besieged place had not lost its line of operation, since it went “from the glacis to the centre of the place where the hospitals, stores and means of supplies are located.”⁷² The “Conversations” at Saint Helena do not include such incongruous uses of the notion, but it would be risky to conclude that it was a consequence of Napoleon’s endorsement of Jomini’s theory of lines of operations.

Conclusion

Clausewitz and Napoleon both acknowledged that Jomini’s work had introduced a break from past approaches to warfare. The former considered that the *Treatise* represented genuine “progress,” but insufficiently so to capture the spirit of war. The second acknowledged that Jomini’s work showed a good understanding of his system of war but had focused on setting out the principles without giving sufficient consideration to what Napoleon called *l’affaire du moment* or the *coup de l’instant*, which again constituted the spirit of war.⁷³

These ambivalent evaluations must be understood within the framework of Clausewitz’s distinction between the analytical and synthetic components of the *Treatise*. Comparative historical analysis enabled Jomini to conceive of the change of scale that was taking place in military operations and, thus, to update a terminology that had been forged to account for the manoeuvres of the wars of the *Ancien Régime*. His new understanding of the lines of operations was at the centre of his analysis, which nevertheless remained focused on the operational art. The theory of war he proposed in the *Treatise* was incomplete, as it did not sufficiently take into account the factor related to moral forces, and Jomini did not remedy this lack in his *Précis* despite the developments he proposed after reading Clausewitz’ work. As Jomini

69 Napoleon, *On War*, p. 93. Napoleon, “Seven notes on the work entitled *A Treatise on Grand Military Operations*,” in *Memoirs of the History of France during the Reign of Napoleon* (London: Colburn, 1823), I, pp. 1–2.

70 Napoléon to Berthier, 24 August 1811, http://www.histoire-empire.org/correspondance_de_napoleon/.

71 Napoléon to Lauriston, 2 March 1813, http://www.histoire-empire.org/correspondance_de_napoleon/.

72 Note for the king of Spain, 22 September 1808, http://www.histoire-empire.org/correspondance_de_napoleon/.

73 Napoleon, *On War*, pp. 74 and 105.

pointed out in the *Notice of the Present Theory of War and of Its Utility*, which introduced the *Précis*, his aim was to formulate a “theory of principles,”⁷⁴ his synthetic ambition remaining focused on what was only part of Clausewitz’s thinking (the one dealt with in the chapter on numerical superiority in *On War*).

The strength of the analytical section of the *Treatise*, however, compensated for the weakness of the synthetic section and made Jomini’s work interesting beyond the merely historical aspects. Jomini not only explained the conditions that made victory possible in the movement warfare of the Revolution and the Empire, but he also developed a conceptual approach to operational art underpinned by a dense network of intertwined notions. The nomenclature of the *Précis* often appears excessively detailed and sometimes confusing; it was intended to provide a conceptual framework for manoeuvring on the theatre of war in a context where reflection on the art of military operations had taken on a strategic scale. Strategy as a “branch” of the art of war was now conceivable, and if it was so, it was because Jomini had pushed rather far the “mania for definitions”; he viewed it as a “merit” in that it was “essential to have an understanding before all upon the different denominations that must be given to the combinations of which it [the science of war] is composed; otherwise it would be impossible to designate them and to qualify them.”⁷⁵

Part of this nomenclature provides concepts and ideas that have endured in military terminology, including the notions of line of operations and logistics. In the *Treatise*, Jomini gave the first concept a new meaning by depriving it of the primarily logistical connotation it had previously had, but he reintroduced logistics as a determining component of the art of war into the *Précis*. Clausewitz was certainly right: the line of operations theory was an abstraction that had isolated a factor from the complexity of real warfare or, if one prefers, a factor that was abstracted from the contingencies in which military operations were deployed. But it was precisely because it was an abstraction that Jomini was able to turn it into the basis on which he built the conceptual system that would provide the terminological foundations of strategic knowledge.

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74 Jomini, *Précis de l’art de la guerre*, p. 11.

75 Jomini, *Précis de l’art de la guerre*, p. 4.