

Introduction

The Significance of Auguste Comte

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Despite Comte's remarkable influence, there has been very little published in recent years on his thought, especially in English. Perhaps the best general overview in English of Comte's entire philosophy is still the 1903 translation of Lucien Lévy-Bruhl's *The Philosophy of Auguste Comte*. The present anthology aims to help correct this oversight. Such a volume is particularly timely given the recent political turn in the philosophy of science.

Philosophers of science such as Philip Kitcher and especially feminist philosophers of science such as Helen Longino have recently turned to questions of how science should be organized to better serve human needs. Kitcher envisions an enlightened public playing a larger role in science policy making, while Longino would like to democratize not just science policy but scientific decision making itself, permitting more different points of view to be expressed.¹ At the same time, recent scholarship in the history of philosophy of science by Don Howard, George Reisch, and Thomas Uebel is revealing the political and social motivations of members of the Vienna Circle of logical positivists such as Otto Neurath, Rudolf Carnap, Hans Hahn, and Philipp Frank.² Sarah Richardson, on the other hand, questions whether the logical positivists can serve as a model for a political philosophy of science today.³ The debate concerns whether the logical positivists just happened to be involved in the politics of their time

or whether there was any connection between their politics and their philosophy of science.

The connection between political philosophy and philosophy of science was clearer at a much earlier stage in the history of positivism. Auguste Comte (1798–1857) conceived of philosophy of science as part of his political project. He saw the need for a new system of ideas to ensure peace, stability, and progress in the wake of the social upheaval resulting from the French Revolution and the Napoleonic Wars. Drawing on the empiricist tradition in philosophy, he articulated the positivist philosophy of science and used it to provide a methodology for a new empirical science of society that he called “sociology.” This new science had two parts: social statics, which was concerned with social solidarity, and social dynamics, which was concerned with social development or progress. This division reflected Comte’s motto, “Order and Progress.” As he saw it, sociology would provide the intellectual foundation on which to build a new kind of society that would promote the general welfare and restore order in the wake of the collapse of the old monarchical and religious regime. Enlightened industrialists, including manufacturers, merchants, and financiers, would replace kings, aristocrats, lawyers, and the military in policy making and governing. Sociology would supersede religion and metaphysical philosophy as the basis for morality. Education would be removed from church control and placed under the direction of an elite class educated in all the sciences, including the science of society. These sociological philosophers would guide public opinion.

The study of Comte shows how not only intellectual developments but political and social motivations contributed to the emergence of the philosophy of science as a separate subdiscipline within philosophy. Philosophers and scientists had always discussed the sorts of issues that philosophy of science deals with, such as the roles of induction and deduction in the production of knowledge, the proper use of hypotheses in science, and the question of whether the theories and concepts of science should be regarded as describing reality or as merely useful tools for making predictions to guide practical applications. Two circumstances were responsible for bringing all these topics from metaphysics, logic, and what is now called epistemology together under the rubric of philosophy of science in the nineteenth century. For some English philosophers such as John Herschel and William Whewell, it was reflection on the surprising growth and development of the sciences themselves. This growth and development in-

cluded a division of intellectual labor in which philosophy separated from science—it was Whewell, after all, who gave us the word *scientist*—and philosophy and science each divided into various specialties. For others, including Comte and John Stuart Mill, it was the wish to extend a secular, scientific way of thinking to social questions, an aspiration with sources in the Enlightenment. In Mill's case, Thomas Babington Macaulay's attacks on his father, James Mill's, deductive methods in his political writings led to the younger Mill's desire to develop empirical methods for the social sciences that could be used in political arguments, methods he articulated in *A System of Logic* (1843), drawing on his reading of Comte's *Cours de philosophie positive* (1830–1842) and Herschel's *A Preliminary Discourse on the Study of Natural Philosophy* (1830). Comte was responding at least in part to Saint-Simonian socialism, which sought a scientific organization of society, but with an insufficient sense of what science is, a problem subsequently shared by many Marxist scientific socialists.

Ultimately, Comte's philosophy is rooted in the French Revolution's attempt to replace a theologically grounded monarchy with a secular society serving the general interest. Many of the faculty and students at the École Polytechnique, France's elite engineering school in Paris, thought that the sciences could provide the intellectual basis for such a society. Comte was one of many students there who were attracted to Henri de Saint-Simon's politics. Other *polytechniciens* were attracted to Fourierism.⁴ Comte's new science of sociology was to provide the intellectual basis for a new scientific organization of society, much as the political philosophies of thinkers like Thomas Hobbes, John Locke, and Jean-Jacques Rousseau had provided the basis for an earlier generation of political experimentation. The goal of Comte's positivist philosophy of science was to establish a method of empirical investigation appropriate to this new science.

In his popular introduction to his philosophy, the *Discours sur l'esprit positif*, Comte explained that he called his system the "positive" philosophy because of the positive role that it was to play in building a new society, in contrast to what he regarded as the negative philosophy that could only criticize and destroy the older regime of church and state.⁵ The other meanings he applied to *positive* are: "useful," "certain," "precise," "relative," "organic," "sympathetic," and "real," as opposed to "chimerical," a pejorative term that he often applied to metaphysical and unverifiable hypotheses in science.⁶

These seven characteristics of positivism are conceptually linked with

one another. When Comte characterized the positive philosophy as “relative,” he meant that it seeks knowledge relative to the satisfaction of our needs rather than absolute knowledge for its own sake. Hence, it seeks “useful” knowledge, knowledge that has practical applications. Such knowledge must be “real,” or verifiable, as well as “precise.” Although our theories may become increasingly precise over time, they never achieve the exact truth but only approach this ideal limit to the degree required by the satisfaction of our needs.⁷ Similarly, the degree of certainty that is called for is only one of practical certainty, and not the absolute certainty of unshakeable Cartesian foundations. Positive science seeks this certainty regarding the laws governing observable phenomena that have some practical bearing on our lives, rather than the ultimate causes of things.⁸ The emphasis on practical knowledge is linked to the task of organizing or rebuilding society; hence the epithet “organic.” The term *sympathetic* has to do with the moral sentiment of sociability or sympathy, which Comte believed would keep scientists focused on questions that concern human needs. The role of these social sentiments in modifying our egoistic instincts is finally understood when sociology becomes a positive science, making possible a new, positive morality.⁹

Educated in mathematics, the physical sciences, and engineering rather than in philosophy, Comte brought a fresh perspective to problems of knowledge, as Warren Schmaus explains in chapter 1. French academic philosophy at that time was dominated by the eclectic spiritualist tradition founded by Victor Cousin, drawing on the work of Pierre Royer-Collard and Pierre Maine de Biran. This eclectic philosophy blended Cartesian rationalism with the Scottish commonsense philosophy of Thomas Reid and was taught to students throughout France by professors who had pursued a purely humanistic, literary education, grounded in the classics and completely divorced from the sciences. Eclectic spiritualism sought a foundation for all of philosophy, including logic, metaphysics, and ethics, in an introspective study of the human mind. Comte, on the other hand, thought that philosophy should be based on a study of the best examples we have of claims to knowledge, mathematics, and the sciences, in their historical development. Comte’s intellectual project in the first three volumes of his *Cours de philosophie positive* thus resembles Whewell’s, who at about the same time based his *Philosophy of the Inductive Sciences* (1840) on his *History of the Inductive Sciences* (1837).

But perhaps more than his contemporaries in the philosophy of science, Comte recognized the social character of science. His turn from introspective methods to the study of the history of science as a basis for epistemology represents a rejection of individualistic approaches and reflects his belief that scientific knowledge is a social product rather than the work of an isolated Cartesian genius. He understood how scientists depend upon a community of researchers for input and criticism. He was also concerned with conditions in wider society that would allow for continued scientific progress and with the role that science should play in society. Scientists, with input from society at large, should work for the common good, but they should also direct the education of ordinary citizens in order that they have scientifically informed views of what is in fact good for them. Critics may disagree with Comte regarding the extent to which he thought the sciences should be directed at the solution of practical problems, but Comte was the first important thinker since Francis Bacon to direct philosophers' attention to the social role of science.

Although historical antecedents of Comte's positivism can be found in the works of the British empiricists George Berkeley and David Hume, Comte was the earliest philosopher to show how it worked out in detail in the various natural sciences. He understood that the development of new sciences involved the development of new methods of inquiry. According to his well-known law of three stages or states (*la loi des trois états*), as each of the sciences of mathematics, astronomy, physics, chemistry, biology, and sociology in succession passed through the theological and metaphysical stages and finally reached the positive state, it made its unique contribution to what he considered the positive method. Mathematics contributed the method of analysis; astronomy contributed observation and hypothesis; physics and chemistry, experimentation; biology, comparison; and finally sociology would develop the method of comparison into the historical method, as Schmaus will explain in greater detail in chapter 1.

Ian Hacking claims that Comte's views about how each science contributes to the positive method provide part of the inspiration for his notion of styles of scientific reasoning.¹⁰ As Hacking sees it, it is not even possible for one to think certain ideas in science until the appropriate method or style of reasoning has developed. To take a Comtean example, in the absence of the method of hypothesis it would make no sense for a Copernican to talk about the earth orbiting the sun. Hypotheses are needed to construct

the very phenomena under study in astronomy. Without hypotheses, there are no orbits; there is nothing more for astronomy than points of light in the sky.

Although critics such as Whewell, Charles Renouvier, and Antoine Augustin Cournot were able nearly right from the start to point out where Comte got his history of science wrong, thanks to Comte the history of science was now the field on which epistemological battles were to be fought, particularly in France, where his influence was especially pronounced. Comte's positivism provided the intellectual context for French philosophy of science in the second half of the nineteenth century, whether providing a starting point for proponents of positivism such as Émile Littré and Lévy-Bruhl or a target for criticism for philosophers such as Renouvier and Émile Boutroux in the development of their own philosophies of science.

Prior to Comte, there was in fact very little history of science written. Most of it was written by scientists themselves, either as part of a polemic aimed at persuading the public that scientific research was deserving of support by society because of the societal benefits it provides, or as the introductory chapter of a scientific work placing it within a tradition, serving a function something like that of the contemporary review of the literature. There were a few works devoted to the history of the mathematical sciences, such as Jean-Étienne Montucla's history of mathematics and Adam Smith's history of astronomy. But Comte's historiography of science was new in two ways. First, where Enlightenment thinkers emphasizing mathematics presented the history of science as reflecting the steady progress of the human mind, Comte, though also a firm believer in progress, showed more of a historical sense, attempting to understand the past on the basis of the standards of that time. Thus, for instance, he did not dismiss alchemy or astrology as mistaken, but regarded them as appropriate systems given what was known at the time. Similarly, he refused to regard the medieval period as a backward step in civilization. Second, Comte emphasized how the sciences interacted with each other as well as with the larger culture and society. By way of contrast, Whewell, writing at approximately the same time, did not attempt to understand the sciences in their historical context but was more interested in reviewing the history of science in order to glean methodological lessons from it for improving current science.¹¹

Of course, one could argue that Comte's history of science does not

meet contemporary standards of scholarship. He did not always consult the relevant primary sources in the history of science in their original language or visit archives. But to be fair, it must be pointed out that the standards of historical scholarship with which we are now familiar were only beginning to be developed in the nineteenth century. Regardless of Comte's unreliability as a historian of science, he nevertheless inspired a French tradition of historical epistemology. Later in the century, Comte's disciples Pierre Laffitte and Grégoire Wyruboff were the first two occupants of the chair of history of science at the Collège de France. Even philosophers such as Gaston Bachelard and Georges Canguilhem, who turned against positivism, gave paramount importance to the history of science.

Through his influence on people like Lévy-Bruhl and Émile Durkheim, Comte has had at least as much impact on the social sciences as he has had on philosophy, especially in France. In sociology and anthropology, even those who would reject other aspects of the positive philosophy nevertheless maintain Comte's idea that there is a level of explanation in the social sciences that is distinct from and does not reduce to explanations of individual behavior. Also, the method of historical analysis he considered appropriate for sociology is reflected in the works of Durkheim, Lévy-Bruhl, Marcel Mauss, and Claude Lévi-Strauss, who thought that the way to understand contemporary culture, religion, and conceptual thought was to trace the origins of these complex forms back to their simple origins in so-called primitive societies. This social science methodology assumes that our present-day complex social phenomena have been compounded over time from simple elements, which can be revealed through historical study and through ethnographic studies of contemporary societies that are regarded as stand-ins for our earliest ancestors: hence books such as Durkheim's *The Elementary Forms of Religious Life* (1912) and Lévi-Strauss's *The Elementary Forms of Kinship* (1949). Michel Foucault's archaeology of knowledge represents a synthesis of this ethnological tradition with the historical epistemology also inspired by Comte.

The influence of Comte's political and social philosophy has been less on academic philosophy than on practical politics. As Mary Pickering explains in the conclusion, the secular, anticlerical aspects of Comte's doctrines appealed to the left, while the right liked his authoritarianism. In France, his influence on the liberal Third Republic as well as the far-right Action Française was particularly noteworthy. The Young Turks, such as Mustafa Kemal Atatürk, the first president of Turkey; Czechs, such as

Tomás Masaryk, the first president of Czechoslovakia; as well as Russians, Poles, and Indians embraced positivism as the key to the modernization of their respective societies. American progressives, such as Herbert Croly, used positivist ideas to make liberalism more favorable to a managerial elite and an interventionist state. Comte's political influence was perhaps greatest in Latin America. His philosophy offered the rising middle class a vision of orderly economic, social, and political modernization and a liberation from their Catholic and colonial past. Among Latin America nations, positivism had the most impact in Brazil. Comte's motto, "Order and Progress" (*Ordem e Progresso*), is still on its flag today, and there is a church of Comte's Religion of Humanity that is still active in Rio de Janeiro. Comte's doctrines also shaped politics and society in Mexico, Argentina, Uruguay, Paraguay, Peru, Bolivia, Venezuela, Guatemala, Costa Rica, El Salvador, Honduras, and Nicaragua.

We are very far from claiming that Comte's philosophy provides a blueprint for contemporary feminists and others who wish to pursue a political philosophy of science. For one, Comte was responding to very different social conditions from those we face today. In addition, Comte's political philosophy taken as whole may be too authoritarian for anyone to recommend. Nevertheless, there are some elements in it worth thinking about that are relevant to discussions of the role of science in society today. For instance, Comte saw the need for leaders to be educated in the history, philosophy, and sociology of science, given the important role of science and technology in contemporary society, which had already become apparent in the nineteenth century and is increasingly so today. However, in many countries today, including the United States, numerous political leaders who are wholly ignorant of science and how it works, both intellectually and socially, nevertheless make policy on issues related to science and technology, including energy, climate change, science education, stem cell research, the space program, genetically modified food crops, and funding for scientific research.

Since Comte also recognized that a government should rest on public opinion and not on force, he thought that it was important that the public be scientifically educated. Unfortunately, he never spelled out a political process by which this public could exercise control over its leaders in government. How to square the notion of a society guided by scientific methods with the idea of individual rights was left to later philosophers such as Renouvier, and remains an important philosophical question. Nev-

ertheless, Comte took the need for a scientifically educated public very seriously, presenting for seventeen years free public lectures on the historical development of astronomy, hoping to introduce the methods of science to ordinary working people in this way. This project could still serve as a model today, when few college students, let alone the general public, have any understanding of the reasoning behind the adoption of many of the scientific theories they are asked to learn.

Comte's Life and Work

In the 1860s, two of Comte's disciples, Émile Littré and Jean-François Eugène Robinet, wrote key accounts of his life and works.¹² Later in the nineteenth century, prominent intellectuals such as John Stuart Mill, John Morley, Thomas Huxley, and Lévy-Bruhl published important analyses of his philosophy.¹³ Much of the work on Comte in the twentieth century appeared as part of an overview of philosophy or sociology, in works by scholars such as Émile Bréhier, Raymond Aron, Friedrich Hayek, and Frank Manuel.¹⁴ One notable exception was Henri Gouhier's three-volume study of Comte's early life, *La jeunesse d'Auguste Comte et la formation du positivisme*, which came out in 1931 to great acclaim. That same year he wrote *La vie d'Auguste Comte*.

The definitive intellectual biography of Comte is the three-volume work by Mary Pickering (published 1993–2009). Here we can provide but a brief overview of his life. Comte was born in 1798 in Montpellier, France. His father was a civil servant who worked in the tax collector's office. His mother was extremely religious. Deeply influenced by the French Revolution (1789–1799), Comte rejected at a young age the royalism and Catholicism of his traditional, bourgeois parents. He adopted the republicanism and social idealism of the revolutionaries and disliked the militarism of Napoleon. He became a rebel thanks in part to the influence of his republican teachers at his high school, who already noted his brilliance, especially in mathematics. In 1814 he entered the *École Polytechnique*. There he learned the role the sciences could play in improving social conditions, which became one of his main goals. He sought above all to reestablish the imagined harmony and stability that society had lost during the French Revolution. However, his rebel nature soon got the best of him—he was expelled in 1816 for insubordination.

Eager to join the elite of scientists and philosophers committed to helping the common people, in 1817 Comte began to work as a writer for

the social reformer Henri de Saint-Simon. Years before, Saint-Simon had called for the creation of a new unified system of scientific knowledge that would include the study of society. This system, which he at times referred to as “positive philosophy,” would lead to a new stage of history, where capable industrialists and scientists would replace do-nothing military leaders and priests. Comte devoted himself to realizing this goal, which by 1817 Saint-Simon had largely abandoned in favor of more practical projects. Unlike Saint-Simon, Comte had scientific training and a systematic, disciplined mind. He would develop Saint-Simon’s ideas and achieve an originality of his own, blending arguments from left-leaning thinkers, such as Condorcet and the Idéologues, and conservative writers, such as Joseph de Maistre. Because of intellectual and generational differences, Comte broke with Saint-Simon in 1824, accusing his mentor of trying to take credit for his seminal essay, the *Plan des travaux scientifiques nécessaires pour réorganiser la société* (1824).

After this rupture, Comte gave private lessons in mathematics and wrote articles for various journals. In late 1825 and 1826 he wrote two series of articles for the Saint-Simonians’ journal, *Le Producteur*, where he developed his idea of what he called “spiritual power.” Asserting the importance of shaping opinions and ideas in modern societies, Comte argued that scientists with knowledge of all the sciences, including the science of society, should represent the new spiritual power, shaping the education of both children and adults and thus countering the bureaucratic despotism and materialism of temporal power, the men in charge of political life and practical activities. From this point on, he devoted himself to forming this new secular priesthood.

In 1826 Comte decided to give a lecture course synthesizing scientific knowledge—that is, the positive philosophy that this priesthood would espouse. The first lecture was attended by many prominent scientists, including Joseph Fourier, Alexander von Humboldt, Henri Ducrotay de Blainville, François Broussais, and François Arago. But after several lectures, Comte had a mental breakdown. Suffering from manic depression and paranoia, he spent eight months in Dr. Jean-Étienne Esquirol’s asylum before being discharged as uncured. His wife, Caroline Massin, then helped him recover at home. The daughter of provincial actors, Massin had run a reading room in Paris before they married in 1824. Despite her best efforts, Comte battled mental illness on and off for the remainder of his life.

In 1838 he experienced another mental crisis and adopted a regime of “cerebral hygiene.” Desirous to maintain his own sense of originality and to avoid learning of attacks from critics, he stopped reading contemporary books, journals, and newspapers. To relax, he developed an interest in music and poetry, which led to his “aesthetic revolution.” He began to argue for the importance of the arts in cultivating the feelings and enhancing one’s comprehension of society.

While struggling with keeping his sanity, finding a suitable professorial position, and maintaining his relationship with his wife (whom he found difficult), he published six volumes of his most famous work, the *Cours de philosophie positive*, from 1830 to 1842. The first three volumes promulgated his positivist philosophy of science, and the remaining volumes, beginning with the fourth volume published in 1839, introduced and named his new science of sociology. The law of three stages, which he had first mentioned in the *Plan des travaux*, and his sixfold classification of the sciences provided the organizing principles for his philosophy of science, which will be discussed in the next several chapters. Society, as a reflection of the reigning philosophy, also went through three stages, marked by changes in temporal and spiritual powers. In the theological stage, military leaders and priests ruled. In the metaphysical stage, lawyers and metaphysicians dominated. In the positive stage, industrialists and positive philosophers would be in control. Comte concluded that once the study of society became a science, the whole system of knowledge would be “positive,” which meant certain, precise, real, constructive, useful, and relative. Knowledge would be homogeneous and unified in the sense that all branches would have the positive scientific method and a common object of study, that is, the betterment of society. People would agree on the most basic ideas. Intellectual harmony would help bring about social harmony. Society would at last regain the stability it had lost during the French Revolution.

The *Cours* attracted the attention of many thinkers throughout the West. However, partly because it was not a work of specialization, it could not help Comte obtain a job as a professor or gain entrance to the Académie des Sciences or the Collège de France, which he thought he deserved. Instead, he became a lowly teaching assistant in mathematics and an admissions officer at the École Polytechnique. He worked there from 1832 to 1851. To further develop his philosophy of mathematics from the *Cours* and show how it could be applied to the teaching of mathematics, he published the *Traité élémentaire de géométrie analytique* in 1843. This

work was addressed to professors of mathematics, encouraging them to teach their subject in a historical manner. Rather than teach students only currently accepted methods, Comte wanted them to become familiar with older methods of geometric analysis so they could see their limitations and understand how newer methods were developed to solve more difficult problems.¹⁵ However, since this work contained some material from his mathematics lectures at the *École Polytechnique*, it was perceived as a text that a student could use to prepare for the entrance examination, and thus its publication went against the rules of his employment in the admissions office. This breach as well as his uncongenial behavior and inattention to his teaching duties led to his dismissal from the *École Polytechnique* in 1851. Émile Littré, his principal French follower, organized the “Positivist Subsidy” to enable Comte to live on contributions from his disciples and admirers. But like Comte’s main English follower, John Stuart Mill, who corresponded with him from 1841 to 1846, Littré eventually broke with the founder of positivism because of petty arguments over money. Doctrinal disagreements and personality clashes also contributed to this rupture, which hurt Comte’s reputation because Littré was a notable intellectual.

Despite these setbacks, Comte commanded a great deal of respect. Large audiences of over four hundred people attended his free lectures on astronomy between 1831 and 1848. These lectures were so successful that he published them in 1844 as the *Traité philosophique d’astronomie populaire*. The opening lectures were published separately that same year as the *Discours sur l’esprit positif*, a short summary of his main principles that was also intended to spread positivism after he realized that the six volumes of the *Cours* were too daunting for most people. In addition, he met several times a week with disciples and admirers in his apartment at 10, rue Monsieur le Prince and carried on a voluminous correspondence with people throughout Europe and the Americas. Besides Littré and Mill, his prominent correspondents and friends included the Count of Limburg Stirum (Menno David), Charles Robin, Henri Ducrotay de Blainville, Pierre Proudhon, Armand Barbès, Antoine Étex, Pierre Laffitte, Julia Ward Howe, Fanny Wright, Alexander Wilkinson, George Henry Lewes, George Grote, John and Sarah Austin, and Harriet Martineau. The latter freely translated the *Cours* into English and condensed it into two volumes in 1853.

Martineau resisted his pleas to translate the *Système*, and their correspondence soon ceased. So did the exchange of letters with many of these

other individuals. It is clear that Comte always had problems managing personal relationships. Such problems stemmed from his intense egoism, paranoia, and devotion to his work. His case is paradoxical, given that he founded sociology partly to create harmony in the social world—harmony that was lacking in his private life. His parents, sister, friends, colleagues, and followers found him difficult, as did his wife, who left him in 1842.

Three years after separating from his wife, Comte met Clotilde de Vaux, the sister of one of his favorite students. Seventeen years younger than Comte, she had been abandoned by her husband, who had fled France to escape gambling debts. Dependent on her parents, she sought to launch a career as a writer to liberate herself. Comte flattered her with his attention. She was intelligent, witty, and forceful, much like his wife. They grew close, and Comte enjoyed his new role of mentor. Indeed, his experience with her later inspired him to write in 1852 the *Catéchisme positiviste*, which consists of conversations between a positivist priest and a woman and seemed to target a female audience.

However, Comte's behavior soon went beyond what de Vaux wanted: discussions about intellectual matters. As Comte made unwanted sexual advances, de Vaux found herself in an awkward situation, as she needed his moral support for her career as well as his money. She was suffering from tuberculosis, and Comte's financial assistance enabled her to buy medicine. Nevertheless, she resisted his demands for sex, inadvertently contributing to her image as a model of purity in Comte's mind. After publishing one short story in a prominent journal and almost completing a short novel, she died of her illness in 1846, about a year after they had met. Stricken with grief and fearful of another mental breakdown, Comte made her into his muse and claimed she inspired his new religion, the Religion of Humanity. In this way, he sought to make her immortal, at least in the memory of posterity. At the same time, his increased hatred for his wife led him to accuse her in his will of having been a prostitute when they met. Massin has suffered from this allegation ever since. However, these characterizations reflect nineteenth-century moralizing tendencies and binary thinking: women were either good or bad. Just as de Vaux was Comte's chaste angel, Massin was the evil sexual temptress.

In addition to these difficulties in Comte's personal life, which were reflected in his writings about the role of women in society, another of his problems was that he kept fishing for supporters in opposite parts of the political spectrum, thus muddying his message. During the Revolution

of 1848, he took up the workers' cause. He supported workers' rights to work and to form associations. Indeed, until the industrialists, who were greedy, selfish, and egoistic, were regenerated, he recommended the establishment of a positivist republic ruled by a dictatorship of three workers concerned with the interests of the entire society. To attract the support of workers, he created his own club, the Positivist Society, and wrote a manifesto of his philosophy, the *Discours sur l'ensemble du positivisme*. Yet after only a small group of workers rallied to his side, Comte put his faith in Napoleon III, hoping that he could convert him to positivism and use his support to win over the French people. One of Comte's last books was *Appel aux conservateurs* (1855), which targeted people on the right. His praise of Napoleon III's takeover disappointed many of his leftist followers; however, once Napoleon displayed the same imperial ambitions as his despised uncle, Comte became critical of his maneuvers and derisively called him a "Mamamouchi," that is, a good-for-nothing. Each time Comte switched his position, he seemed to lose supporters.

Comte's growing moralizing inclinations and his original desire to put society on a new footing led him to write his second major work: the *Système de politique positive*. It was published in four volumes between 1851 and 1854. The first volume incorporated his 1848 *Discours sur l'ensemble du positivisme*, and the appendix of the last volume contained his most important pre-1830 essays in order to demonstrate the continuity of his positivist program. In the *Système*, Comte outlined his new science of morality, his new religion involving the worship of Humanity, and his proposals for political reconstruction. He argued that social harmony depends on not only intellectual consensus but emotional solidarity. To his thinking, people were growing not only more intelligent but more sociable and religious, that is, more interconnected. He coined the term *altruism* around 1850 to underscore the importance of human sociability in maintaining social solidarity and progress. To cultivate altruism, people should make humanity the center of their thoughts, actions, and emotions. The Cult of Humanity would be reinforced through positivist schools, a new commemorative calendar based on secular saints (such as Aristotle and Dante), public festivals, new sacraments (reflecting his Catholic background), rituals conducted in temples of Humanity, continual socialization by positive priests, and a rich culture created by artists and poets.

Comte's stress on this universal secular Religion of Humanity as the key to social unity reflected his lack of faith in big-government solutions

to social fragmentation. Having lived through monarchies, republics, and empires, he criticized his contemporaries for focusing excessively on political experimentations, such as parliaments, which he viewed as unproductive. To him, there first had to be an intellectual revolution. It would lead to moral renewal and then a social and political restructuring—one that would lead to the emergence of small republics ruled in a just manner by regenerated industrialists (the temporal power) and positive philosophers or priests of the Religion of Humanity, who would be aided by women and workers. He outlined his political plans in the *Système*, hoping to temper class conflict and alleviate the problems of the common people.

In the last years of his life, Comte carefully composed his posthumously published *Testament*, which included the correspondence between him and Clotilde de Vaux. He also went back to his first academic love, mathematics. Insisting on the continuity in his intellectual interests, he wrote the *Synthèse subjective*, which was published in 1856. It was to be the first volume of a larger, four-volume work called the *Synthèse subjective ou Système universel des conceptions propres à l'état normal de l'Humanité*. It was supposed to show how love could benefit and more closely bring together all three aspects of human nature: the mind, morality (which involved our spiritual and emotional lives), and practical activities. In this first, nine-hundred-page volume devoted to the mind, he showed how feelings affected logic, especially mathematics. He sought to prove that the sciences, even mathematics, which was furthest from man, should be inherently religious, that is, should have some sort of social goal. This work, the *Synthèse subjective* of 1856, is the least read and most incomprehensible of all of Comte's books. He did not have a chance to complete the other volumes, which might have helped make it more understandable, because the "Great Priest of Humanity," as he called himself, died the next year, in September 1857, of stomach cancer. At the time of his death the Positivist Society had shrunk to thirty-seven members. Yet Comte's influence would prove to be more widespread than this small number would suggest.

The Problem of Comte's Intellectual Evolution

Many scholars, including John Stuart Mill, blamed Comte's love for de Vaux for having led him to abandon his scientific agenda and revert to theological and metaphysical thinking. In their view, Comte had a "second career," one of decline. Yet it is important to remember that in his so-called "first career," before his meeting with de Vaux, he had emphasized

the need for a spiritual power to counter the temporal power and maintained that the emotions had an important role in shaping our ideas and actions.

Comte's system arose from a paradox deep within him. Disturbed by the growing skepticism of the postrevolutionary period, he experienced a religious calling but suffered from an inability to believe in God. This ordeal gave him a multidimensional picture of human nature, which was reinforced by the romanticism of the period. Comte knew that reason could not satisfy all human needs. In fact, in the *Cours*, he stated that philosophers erred when they portrayed man "against all evidence as an essentially reasoning being, executing continually, without his knowledge, a multitude of imperceptible calculations with almost no spontaneity of action, even from the most tender age of childhood."¹⁶ Years before meeting de Vaux, Comte denounced the exclusive attention given to the mind and discussed the power of the emotions. As early as 1818, he wrote to a friend, "The gentle and tender affections are the happiest, the source of the only true happiness that one can get hold of on this miserable planet, and one could never have enough of them."¹⁷ Reason could not possibly satisfy all human needs. "Daily experience" demonstrated that it was the "passions" that stimulated the intellectual faculties and constituted the "principal motives of human action."¹⁸

Thus early on Comte recognized that the needs of society were not only intellectual but emotional, and that its spiritual reorganization had to involve the heart at least as much as the mind. Even if a general doctrine were established, a solid social consensus could not exist without the growth of the sympathies; it was wrong to assume that "it is above all by intelligence that man can be changed and improved."¹⁹ As he endeavored to respond to the demands of the heart and mind, Comte sought to create an intellectual system based on science that would appeal to all classes by satisfying the human need for faith. Dogmatism, in his eyes, was the natural mental state of humanity—the state that ensured the sanity of the individual and the community and allowed for the possibility of action. By creating a new set of respectable beliefs that would extend to all people and transform their feelings and values, positivism would establish the kind of intellectual, emotional, and moral consensus that was the salient characteristic of a religious system and a smoothly operating society. The creation of this belief system and a clergy to implement it remained Comte's spiritual mission throughout his life. He always considered his goal to be

“spiritual” because his project involved the organization of people’s ideas, sentiments, and values.

The first volumes of the *Cours* discuss the natural sciences in a style that Comte made deliberately dry and passionless. He avoided literary devices that would have made reading his works more pleasant in order to differentiate himself from other social thinkers, whom he considered dangerous rhetoricians. His difficult style was intended to make his study of society seem scientific and objective and thus worthier of respect.

Comte also initially focused on the sciences alone, for in his view social regeneration would fall into a “vague mysticism” if it treated the feelings without first systematizing ideas. He explained to Mill in 1845: “This is why my fundamental work [the *Cours*] had to address itself almost exclusively to the intellect: this had to be a work of research, and even incidentally, of discussion, destined to discover and constitute true universal principles by climbing by hierarchical degrees from the most simple scientific questions to the highest social speculations.”²⁰ Only when social issues came up at the end of the *Cours* did Comte believe that he could logically develop his concepts of a spiritual power and a spiritual doctrine touching on the emotions. Broaching these subjects at the beginning would have ruined the antitheological and scientific impressions of his enterprise, which were initially most important to impart to his readers because they distinguished his philosophy from that of other social reformers.

At the end of the *Cours*, Comte therefore launched into the spiritual aspects of social reorganization. In one of the closing volumes, written years before he met de Vaux, he wrote that “universal love . . . is certainly far more important than the intellect itself in . . . our existence . . . because love spontaneously uses even the lowest mental faculties for everyone’s profit, while egoism distorts or paralyzes the most eminent dispositions, which consequently are often far more disturbing than efficacious in regard to . . . happiness.”²¹ Moreover, he suggested that the belief system of positivism was religious because it would replace Catholicism and have its own Positive Church.²² Armed with the rational, coherent system of positive philosophy, the positivist clergy would “finally seize the spiritual government of humanity” and ensure the triumph of a new, more effective morality, which in the closing pages of the *Cours* was already attracting Comte’s attention more than sociology.²³

Comte would further develop his ideas on these issues in the 1850s, when he established the Religion of Humanity in the *Système de politique*

positive (1851–1854), which focused on the moral and emotional aspects of social regeneration. Because he had already established a system of “fundamental ideas,” he maintained that he now had to describe their “social application,” which would consist of the “systematization of human sentiments, which is the necessary consequence of that of ideas and the indispensable basis of that of institutions.”²⁴ In the *Système*, he made morality a seventh science and explored ways of ensuring social consensus. Here he also emphasized the importance of collective memory for maintaining society, an idea that was developed further by Durkheim and his associates in sociology such as Maurice Halbwachs. Private and public acts of commemoration in the form of worshipping important figures from one’s own past and that of Western civilization would provide a sense of continuity between past and present generations and help to unite society. Seeds of this concept can be found in the *Cours*, which states that individuals could best satisfy their natural “need for eternity” by contributing daily to the progress of humanity, especially through “benevolent actions” and “sympathetic emotions.”²⁵ In the *Système*, he described the rituals and positivist culture that would rejuvenate people’s emotional lives, bring them back into contact with the concrete, and stimulate the arts. The *Système* represented the understandable result of Comte’s fervent desire to effect a return to the most emotionally intense form of religion found in fetishism, in a way suitable to modern society.

* * *

There was no sudden change of direction from Comte’s “first” career to his “second,” as most scholars have argued. The second part of his life, which involved setting up his religious and political system, flowed naturally from the first part of his career, which established the intellectual basis of that system. There was no break in Comte’s development; from the start his solution to the malaise of his era was a new belief system that functioned as a religion. If anything, Comte’s approach was indebted to Saint-Simon’s conviction that the “positive doctrine” was a religion because all religions consisted of the reigning intellectual system—that is, the ideas and moral precepts held in common by the members of society.²⁶ Comte’s interest in religion was a natural outgrowth of his concern with moral regeneration, an interest he had had since his earliest writings for Saint-Simon. In 1817, while working for Saint-Simon, he had proclaimed the need to organize “a system of terrestrial morality” that would replace

Christianity.²⁷ Later, he decided that the word *system* was too restrictive and intellectual. The Revolution of 1848 made him particularly eager to experience what he assumed would be the final, decisive clash between positivism and its main rival, Catholicism. To encourage this last battle, he began to call his system the “Religion of Humanity,” a term he borrowed from the Saint-Simonians, who had invented it in the early 1830s.²⁸ Defending his terminology, he explained in 1849 that he had “dared to join . . . the name [religion] to the thing [positivism], in order to institute directly an open competition with all the other systems.”²⁹ Though rational, this decision caused a rift among Comte’s followers, even during his lifetime. Those disciples who believed his scientific program was of key importance fought against those who asserted that his religious ideas were most significant.

The Scope of This Book

There are two parts to this book. The first part focuses on various aspects of Comte’s philosophy of science, while the second deals with his social and political thought. The volume begins with a chapter on Comte’s general philosophy of science, followed by four chapters concerning each of the most important of the six sciences in Comte’s encyclopedic classification scheme.

In the first chapter, Warren Schmaus explains how Comte introduced a historical and social approach to philosophical questions about the nature of scientific knowledge and broke with the eclectic spiritualist tradition of grounding philosophy in an introspective psychology. He also critically examines Comte’s attempt to separate his philosophy from metaphysics. Finally, he asks whether Comte’s philosophy of science provided any useful normative lessons for science.

The second chapter questions whether Comte gave good normative advice when he told us to separate science from metaphysics. Michel Blay argues that in attempting to do so, Comte obscured all the difficult conceptual work that went into the historical development of the science of mechanics. Similarly, even if it had been advisable in Comte’s day to avoid speculation about the nature of light and to focus on geometric optics instead, this does not imply that it would continue to be sound methodological advice.

In chapter 3, Anastasios Brenner discusses two sorts of normative lessons Comte drew from astronomy. In Comte’s public lectures on the his-

tory of astronomy, he sought to introduce laypeople to scientific reasoning rather than to present scientific knowledge as a finished product. For scientists, he maintained that astronomy provided a model for the proper use of hypotheses in science, which was to anticipate the laws governing the phenomena rather than to postulate causal entities to explain them. Brenner argues that Comte maintained a very liberal attitude toward the use of hypotheses, which derives from his antimetaphysical conception of the aim of science: it is to provide useful knowledge, rather than knowledge that corresponds to the real laws of nature.

In chapter 4, Laurent Clauzade explains how Comte sought a definition of life that avoided metaphysical vital principles and emphasized that biology was a theoretical science consisting of explanatory laws and not just descriptive natural histories. The chapter then describes the various methods of comparison that Comte thought biology should use. For Comte, comparison among different species is linked to their classification in a linear hierarchy. As Clauzade explains, this serial classification of species according to their increasing degree of complexity provided Comte with a model for the linear arrangement of societies according to their presumed degree of complexity, an issue that is taken up again in the following chapter on Comte's sociology.

The fifth chapter explains Comte's political and social purposes for founding the new science of sociology and his reasons for thinking that the time was propitious for just such a discipline. By historically situating Comte's sociology in both its intellectual and wider social context, Vincent Guillin makes what might otherwise be surprising aspects of Comte's new science appear reasonable, such as his exclusion of psychology and economics from his classification of the sciences. Guillin also criticizes some of Comte's other assumptions, such as his supposition that societies could be ranked in a linear classification scheme.

Part II of this book consists of three chapters devoted to Comte's social and political thought. In chapter 6, Michel Bourdeau provides an overview of Comte's positive politics, which Comte posited would be superior to the old regime because it would rely on the newly created science of society, which provided it with its two key principles. The first principle is that there is no society without government; there must be some kind of force to strengthen the fragile, social consensus that is weakened by the increasing division of labor. Yet since social phenomena are subject to natural laws, government power is necessarily limited, and a government can

aspire only to modify the existing order. The second of Comte's principles is the separation of spiritual from temporal power. Spiritual power not only provides a moderating influence on temporal power but also helps to create social solidarity by shaping people's beliefs and feelings, especially through education. For Comte, scientists should represent this new spiritual power. The chapter presents some of the surprising, often very modern consequences of these two principles, touching on the relationship between local government and central government, colonialism, and our relations with animals.

In the next chapter, 7, Jean Elisabeth Pedersen explores the complex relationships between Comte's evolving views on art, emotional life, and the social significance of gender. Pedersen also defends the continuity of Comte's thought over the course of his life. She argues that Comte was never uninterested in the fine arts, contrary to received opinion. His early writings recognize their important social function as a way to reach the masses and to disseminate new ideas. Although his later thought may have placed more importance than the *Cours* did on the emotions rather than on intelligence, the break was not total; the heart always needed to be disciplined. As for "the woman question," despite exalting the "emotional sex" and establishing a cult of the Virgin Mother, the subordination remains: women are confined to domestic life and kept in a state of dependence and inferiority.

Andrew Wernick begins chapter 8 by noting how difficult it is to take seriously Comte's efforts to found a new religion. However, we should evaluate Comte's proposals in their historical context. Comte asked a question that we cannot avoid indefinitely: what religion can exist after the death of God? Providing an essential bond among the members of society, religion would only increase in importance as the coercive nature of the state would decrease in the future. Comte's positivist religion is actually not a religion of science, but a Religion of Humanity. Through a system of cult (worship), regime, and dogma that borrows heavily from Catholicism, it would strengthen the weaker instincts of altruism in their struggle against the stronger instincts of egoism. It would strengthen altruism by having us know, love, and serve Humanity (the Great Being), which, unlike God, is a temporal, human production, for it consists of all beings, past, present, and future. We become part of it in worshipping it.

In the concluding chapter, Mary Pickering traces Comte's considerable influence on both scholarly and political worlds and the modern mindset.

It covers the various thinkers throughout Europe, the Americas, and Asia who took up and developed various aspects of his thought or were even deeply influenced by him in a negative direction. The author points out the many difficulties in evaluating Comte's legacy, thanks in part to the ambiguity of his most important contribution to Western thought, positivism. Should positivism include just his philosophy of science, or his political philosophy and Religion of Humanity as well? Herbert Spencer, John Stuart Mill, Alexander Bain, and many others since have been considered positivists, but their views are very different from Comte's. As Comte himself was not above making metaphysical assumptions, can we consider even Comte himself a positivist? Defining positivism either too narrowly or too broadly may both present problems, in both philosophy and the political sphere, where it has taken on a very broad meaning. Auguste Comte produced a remarkable system of thought that besides attracting the attention of philosophers and academics held enormous appeal for a class of people who had little concern for traditional philosophical problems but a keen interest in the application of science to improving the human condition.