with their emphasis on the exclusive productivity of land, were associated with devotion to the landed, aristocratic interest. The French Revolution against aristocratic rule and against feudal landholding had no patience for physiocracy. The impatience was aggravated by the emergence of industrialism and the Industrial Revolution, which increasingly rendered obsolete the physiocratic devotion to the land. All these factors served to discredit physiocracy totally, and since Turgot was unfortunately identified as a physiocrat, his reputation was dragged down at the same time. This situation was aggravated by the fact that Turgot's former aide and close friend, editor and biographer was the last of the physiocrats, the statesman Pierre Samuel DuPont de Nemours (1739–1817), who added to the problem by deliberately distorting Turgot's views to make them appear as close to physiocracy as possible.

Originally, Smith's *Wealth of Nations* was poorly received in France. The then dominant physiocrats scorned it as a vague and poor imitation of Turgot. However, the great libertarian Condorcet, who had been a close friend and biographer of Turgot, wrote admiring notes appended to several French translations of the *Wealth of Nations*. And Condorcet's widow, Madame de Grouchy, continued the family interest in Smithian studies by preparing a French translation of the *Theory of Moral Sentiments*. Later, in the 1790s, the physiocratic remnants latched gratefully on to the Smithian coat-tails. Smith, after all, favoured *laissez-faire*, and he was almost outlandishly pro-agriculture, holding that agricultural labour was the chief source of wealth. As a result, most of the later physiocrats became early Smithians in France, led by the Marquis Germain Garnier (1754–1821), the first French translator of the *Wealth of Nations*, who presented Smithian doctrine to France in his *Abrège elementaire des principes de l'économie politique* (1796).

## 1.2 Say, de Tracy and Jefferson

The leadership of the French Smithians was quickly gained by Jean-Baptiste Say, when the first edition of his great *Traité d'Économie Politique* was published in 1803. Say was born in Lyons to a Huguenot family of textile merchants, and he spent most of his early life in Geneva, and then in London, where he became a commercial apprentice. Finally, he returned to Paris as an employee of a life insurance company, and the young Say quickly became a leader of the *laissez-faire* group of *philosophes* in France. In 1794, Say became the first editor of the major journal of this group, *La Décade Philosophique*. A champion not only of *laissez-faire* but also of the burgeoning *industrielisme* of the Industrial Revolution, Say was hostile to the absurdly pro-agricultural physiocracy.

The *Décade* group called themselves the 'ideologists', later sneeringly dubbed by Napoleon the 'ideologues'. Their concept of 'ideology' simply

meant the discipline studying all forms of human action, a study meant to be a respecter of individuals and their interaction rather than a positivistic or scientistic manipulating of people as mere fodder for social engineering. The ideologues were inspired by the views and the analysis of the late Condillac. Their leader in physiological psychology was Dr Pierre Jean George Cabanis (1757–1808), who worked closely with other biologists and psychologists at the *École de Médecine*. Their leader in the social sciences was the wealthy aristocrat Antonie Louis Claude Destutt, Comte de Tracy (1754–1836).[1] Destutt de Tracy originated the concept of 'ideology', which he presented in the first volume (1801) of his five-volume *Éléments d'idéologie* (1801–15).

De Tracy first set forth his economic views in his *Commentary* on Montesquieu, in 1807, which remained in manuscript due to its boldly liberal views. In the *Commentary*, de Tracy attacks hereditary monarchy and one-man rule, and defends reason and the concept of universal natural rights. He begins by refuting Montesquieu's definition of freedom as 'willing what one ought' to the far more libertarian definition of liberty as the ability to will and do what one pleased. In the *Commentary*, de Tracy gives primacy to economics in political life, since the main purpose of society is to satisfy, in the course of exchange, man's material needs and enjoyments. Commerce, de Tracy hails as 'the source of all human good', and he also lauds the advance of the division of labour as a source of increasing production, with none of the complaints about 'alienation' raised by Adam Smith. He also stressed the fact that 'in every act of commerce, every exchange of merchandise, both parties benefit or possess something of greater value than what they sell'. Freedom of domestic trade is, therefore, just as important as free trade among nations.

But, de Tracy lamented, in this idyll of free exchange and commerce, and of increasing productivity, comes a blight: government. Taxes, he pointed out, 'are always attacks on private property, and are used for positively wasteful, unproductive expenditure'. At best, all government expenditures are a necessary evil, and most, 'such as public works, could be better performed by private individuals'. De Tracy bitterly opposed government creation of and tampering with currency. Debasements are, simply, 'robbery', and paper money is the creation of a commodity worth only the paper on which it is printed. De Tracy also attacked public debts, and called for a specie, preferably a silver, standard.

The fourth volume of de Tracy's *Elements*, the *Traité de la volonté (Treatise on the Will)*, was, despite its title, de Tracy's treatise on economics. He had now arrived at economics as part of his grand system. Completed by the end of 1811, the *Traité* was finally published at the overthrow of Napoleon in 1815, and it incorporated and built upon the insights of the *Commentary* on Montesquieu. Following his friend and colleague J.B. Say, de Tracy now

heavily emphasized the entrepreneur as the crucial figure in the production of wealth. De Tracy has been sometimes called a labour theory of value theorist, but 'labour' was instead upheld as highly productive as compared to land. Furthermore, 'labour' for de Tracy was largely the work of the entrepreneur in saving and investing the fruits of previous labour. The entrepreneur, he pointed out, saves capital, employs other individuals, and produces a utility beyond the original value of his capital. Only the capitalist saves part of what he earns to reinvest it and produce new wealth. Dramatically, de Tracy concluded: 'Industrial entrepreneurs are really the heart of the body politic, and their capital is its blood.'

Furthermore, all classes have a joint interest in the operations of the free market. There is no such thing, de Tracy keenly pointed out, as 'unpropertied classes', for, as Emmet Kennedy paraphrases him, 'all men have at least their most precious of all properties, their faculties, and the poor have as much interest in preserving their property as do the rich'.[2] At the heart of de Tracy's central emphasis on property rights was thus the fundamental right of every man in his own person and faculties. Abolition of private property, he warned, would only result in an 'equality of misery' by abolishing personal effort. Moreover, while there are no fixed classes in the free market, and every man is both a consumer and a proprietor and can be a capitalist if he saves, there is no reason to expect equality of income, since men differ widely in abilities and talents.

De Tracy's analysis of government intervention was the same as in his *Commentary*. All government expenditures are unproductive, even when necessary, and all embody living off the income of the producers and are therefore parasitic in nature. The best encouragement government can give to industry is to 'let it alone', and the best government is the most parsimonious.

On money, de Tracy took a firm hard-money position. He lamented that the names of coins are no longer simple units of weight of gold or silver. Debasement of coins he saw clearly as theft, and paper money as theft on a grand scale. Paper money, indeed, is simply a gradual and hidden series of successive debasements of the money standard. The destructive effects of inflation were analysed, and privileged monopoly banks were attacked as 'radically vicious' institutions.

While following J.B. Say in his emphasis on the entrepreneur, de Tracy anticipated his friend in rejecting the use of mathematics or statistics in social science. As early as 1791, de Tracy was writing that much of reality and human action is simply not quantifiable, and warned against the 'charlatan' application of statistics to the social sciences. He attached the use of mathematics in his *Mémoire sur la faculté de penser* (*Memoir on the faculty of thought*) (1798), and in 1805 broke with his late friend Condorcet's stress on the importance of 'social mathematics'. Perhaps influenced by Say's *Traité*

two years earlier, de Tracy stated that the proper method in the social sciences is not mathematical equations but the drawing forth, or deduction, of the implicit properties contained in basic 'original' or axiomatic truths – in short, the method of praxeology. To de Tracy, the fundamental true axiom is that 'man is a sensitive being', from which truths can be obtained through observation and deduction, not through mathematics. For de Tracy, this 'science of human understanding' is the basic foundation for all the human sciences.

Thomas Jefferson (1743–1826) had been a friend and admirer of the *philosophes* and ideologues since the 1780s when he served as minister to France. When the ideologues achieved some political power in the consular years of Napoleon, Jefferson was made a member of the 'brain trust' Institut National in 1801. The ideologues – Cabanis, DuPont, Volney, Say, and de Tracy – all sent Jefferson their manuscripts and received encouragement in return. After he finished the *Commentary* on Montesquieu, de Tracy sent the manuscript to Jefferson and asked him to have it translated into English. Jefferson enthusiastically translated some of it himself, and then had the translation finished and published by the Philadelphia newspaper publisher William Duane. In this way, the *Commentary* appeared in English (1811), eight years before it could be published in France. When Jefferson sent the published translation to de Tracy, the delighted philosopher was inspired to finish his *Traité de la volonté* and sent it quickly to Jefferson, urging him to translate that volume.

Jefferson was highly enthusiastic about the *Traité*. Even though he himself had done much to prepare the way for war with Great Britain in 1812, Jefferson was disillusioned by the public debt, high taxation, government spending, flood of paper money, and burgeoning of privileged bank monopolies that accompanied the war. He had concluded that his beloved democrat–republican party had actually adopted the economic policies of the despised Hamiltonian federalists, and de Tracy's bitter attack on these policies prodded Jefferson to try to get the *Traité* translated into English. Jefferson gave the new manuscript to Duane again, but the latter went bankrupt, and Jefferson then revised the faulty English translation Duane had commissioned. Finally, the translation was published as the *Treatise on Political Economy*, in 1818.[3]

Former President John Adams, whose ultra-hard money and 100 per cent specie banking views were close to Jefferson's, hailed the de Tracy *Treatise* as the best book on economics yet published. He particularly lauded de Tracy's chapter on money as advocating 'the sentiments that I have entertained all my lifetime'. Adams added that

> banks have done more injury to the religion, morality, tranquility, prosperity, and even wealth of the nation, than they ... ever will do good.

> Our whole banking system, I ever abhorred, I continue to abhor, and shall die abhorring ... every bank of discount, every bank by which interest is to be paid or profit of any kind made by the deponent, is downright corruption.

As early as 1790, Thomas Jefferson had hailed *The Wealth of Nations* as the best book in political economy, along with the work of Turgot. His friend Bishop James Madison (1749–1812), who was president of William & Mary College for 35 years, was the first professor of political economy in the United States. A libertarian who had emphasized early that 'we were born free', Bishop Madison had used the *Wealth of Nations* as his textbook. Now, in his preface to de Tracy's *Treatise*, Thomas Jefferson expressed the 'hearty prayer' that the book would become the basic American text in political economy. For a while William & Mary College adopted de Tracy's *Treatise* under Jefferson's prodding, but this status did not last long. Soon Say's *Treatise* surpassed de Tracy in the race for popularity in the United States.

The calamitous 'panic' of 1819 confirmed Jefferson in his stern hard-money views on banking. In November of that year, he elaborated a remedial proposal for the depression which he characteristically asked his friend William C. Rives to introduce to the Virginia legislature without disclosing his authorship. The goal of the plan was stated bluntly: 'The eternal suppression of bank paper'. The proposal was to reduce the circulating medium gradually to the pure specie level; the state government was to compel the complete withdrawal of bank notes in five years, one-fifth of the notes to be called and redeemed in specie each year. Furthermore, Virginia would make it a high offence for any bank to pass or accept the bank notes of any other states. Those banks who balked at the plan would have their charters forfeited or else be forced to redeem all their notes in specie immediately. In conclusion, Jefferson declared that no government, state or federal, should have the power of establishing a bank; instead, the circulation of money should consist solely of specie.

### 1.3 The influence of Say's *Traité*

J.B. Say was made a member of the governing tribunate during the Napoleonic consulate regime in 1799. Four years later, his *Traité* was published, soon establishing him as the outstanding interpreter of Smithian thought on the continent of Europe. The *Traité* went through six editions in Say's lifetime, the last in 1829, then double in size from the original edition. In addition, Say's *Cours complet d'économie politique* (1828–30) was reprinted several times, and the extract from the *Traité* printed as the *Catéchisme d'Économie politique* (1817), was reprinted for the fourth time shortly after Say's death. Every great European nation translated Say's *Traité* into its own language.

In 1802, Napoleon cracked down on the ideologues, a group he had once courted, but had always detested for its liberal economic and political views. He recognized the ideologues as the staunchest opponents, in theory and practice, of his intensifying dictatorship.[4] Napoleon forced the senate to purge itself and the tribunate of the ideologues, thus ousting J.B. Say from his tribunal post. The ideologues were philosophers, and the Bonapartists saw philosophy itself as a threat to dictatorial rule. As Joseph Fievée, editor of the Bonapartist *Journal de l'Empire*, put it, 'philosophy is a means of complaining about the government, of threatening it when it departs from the principles and the men of the Revolution'.[5]

Two years later, shortly after becoming emperor, Napoleon again went after Say, refusing to allow a second edition of the *Traité* to be published unless Say changed an offending chapter. When Say refused to do so, the new edition was suppressed. Ousted from the French government, Say became a successful cotton manufacturer for ten years. In fact, Say became one of the leading new-style manufacturers in France. As his biographer writes, Say was 'intimately involved in the emergence of large scale industry. He was, in effect, one of the most remarkable types of these manufacturers of the Consulate and of the Empire, of these first great entrepreneurs who sought to place the new technological processes in operation'.[6]

After Napoleon's fall in 1814, the second edition of the *Traité* was finally published, and in 1819 Say embarked on a new professorial career, first at the Conservatoire National and finally at the College de France. The admiring Jefferson, himself steeped in *laissez-faire* economic thought, assured Say that he would find a hospitable climate in the United States. Jefferson was joined in those wishes by President Madison. Indeed, Jefferson wanted to offer Say the professorship of political economy at his newly founded University of Virginia.

Say's *Traité* exerted great influence in Italy. At first, Smith's *Wealth of Nations* had little impact on Italian economics. Italy had already had a flourishing free trade tradition, notably in the systematic *Meditations on Political Economy* (1771) (*Meditazioni sull'economia politica*) of the Milanese Count Pietro Verri (1728–97). There was no mention of Smith in the 1780 work of the Neapolitan Gaetano Filangieri (1752–88), in the writings of Count Giovanni Battista Gherardo D'Arco (1785), or even as late as Francesco Mengotti's free trade work *Il Colbertismo* (1792) – and even though the *Wealth of Nations* had been translated into Italian in 1779.

The spread of the French revolutionary regime into Italy brought Adam Smith's influence along with the soldiers. Smith became the leading economic authority during the early Napoleonic years. After 1810, Say and de Tracy swept Italian economics into their camp. The views of Say were propounded in the lucid treatise, the *Elementi di economie politica* (1813) by

Luca De Samuele Cagnazzi of Altamura (1764–1852), and in the treatise by Carlo Bosellini of Modena, *Nuovo esame delle sorgenti della privata e della pubblica richezza* (1816). The courageous Abbate Paolo Balsamo (1764–1816) spread Smithian and later Say's views throughout Sicily, calling for free trade in agriculture, and for the freeing of Sicilian agriculture from the restrictions of feudalism (particularly in his *Memorie economiche ed agrarie*, Palermo, 1803, and his *Memorie inedite di pubblica economia*, Palermo, 1845).

Say's friend and colleague Destutt de Tracy also wielded enormous influence in Italy. His *Elements* was translated into a ten-volume edition (Milan, 1817–19) by the former priest Giuseppe Compagnoni (1754–1833). Furthermore, high up in the revolutionary government of Naples in the 1820s were the elderly statesman and philosopher Melchiorre Delfico, head of the provisional revolutionary junta and correspondent and admirer of de Tracy, and the follower of de Tracy, Pasquale Borelli, head of the Neapolitan revolutionary parliament.

Spain and the new Latin American countries were also influenced by de Tracy. One of the leaders of the liberal Spanish revolution of 1820 against absolute monarchy was Dom Manuel Maria Gutierrez, the translator of the *Traité* into Spanish (1817), and professor of political economy at Malaga. Furthermore, a member of the revolutionary Spanish Cortes of 1820 was Ramon de Salas, the translator of de Tracy's *Commentary*, who returned from exile in France to take part in the struggle. And still another member of the Cortes, J. Justo Garcia, had translated de Tracy's book on *Logic*., In Latin America, de Tracy's admirer and follower, Berardino Rivadavia, became president of the newly independent Republic of Argentina.[7] Tracy also became highly popular in Brazil as well as Argentina, and in Bolivia his 'ideology' became the official doctrine of the state schools in the 1820s and 1830s.

It is hardly surprising that the second wave of Smithian writers in Germany were strongly influenced by J.B. Say's *Traité*. Ludwig Heinrich von Jakob (1759–1827) was, like Kraus, a Kantian philosopher as well as economist. Studying at the University of Halle, he became professor of philosophy there. Von Jakob published a Smithian treatise on general economic principles, the *Grundsätze der Nationalökonomie* (Principles of Economics) (Halle, 1805). Later editions, up to the third, published in 1825, incorporated Sayite emendations. Furthermore, von Jakob was so impressed with Say's work that he translated the *Traité* into German (1807) and into Russian. Von Jakob, indeed, helped spread enlightened views in Russia in more ways than by publishing a translation of Say. He taught for a while at the University of Kharkov, and was a consultant to several official commissions at St Petersburg.

The most interesting and thoroughing Sayite in Germany was Gottlieb Hufeland (1760–1817). Hufeland was born in Danzig, where he became

mayor, and studied at Göttingen and Jena, where he became professor of political economy. In his *Neue Grundlegung der Staatswirtschaftskunst* (Giessen, 1807–13), Hufeland adopted all the important innovations of J.B. Say – or rather his return to the French–continental, pre-Smithian tradition. Thus, Hufeland brought back the entrepreneur, and carefully separated his pure profits from confronting risk, from his interest return and from the rent or wage for his managerial abilities. Furthermore, Hufeland adopted a utility–scarcity theory of value, stressing the cause of value as the valuations of a stock of goods by individual consumers.

The influence of Say and de Tracy in Russia strikes an ironic note. In 1825, one of the leading liberal Decembrists, Pavel Ivanovich Pestel, who considered de Tracy's *Commentary* as his Bible, tried to assassinate the absolute ruler Csar Nicholas I. Nicholas, in turn, proceeded to have Pestel hanged, even though he himself was educated in the Smithian and Sayite *Cours d'Economie Politique* of Heinrich Freiherr von Storch.[8]

The English translation of the fourth edition of Say's *Traité* appeared in London in 1821, as *The Treatise on Political Economy*. The free trade Boston journal, the *North American Review*, reissued the *Treatise* in the United States the same year, with American annotations by the free trade champion Clement C. Biddle. Say's *Treatise* quickly became and remained the most popular textbook on economics in the United States down through the Civil War.[9] Indeed, it was still being reprinted as a college text in 1880. During that period, the *Treatise* had gone through 26 American printings, in contrast to only eight in France.

The untranslated writings of the ideologues had an unexpected influence in Great Britain. Thomas Brown, friend and successor to Dugald Stewart in the chair of moral philosophy at Edinburgh, was fluent in French, and was heavily influenced by the philosophy of de Tracy. Furthermore, James Mill was a philosophic disciple of Dr Brown, and was himself an admirer of Helvetius, Condillac and Cabanis. It is not surprising, therefore, that Mill should have been the first in Great Britain to appreciate the importance of Say's law of markets.

It is no wonder that the Say version of Smithianism became the most popular economics work on the European continent and in the United States. Not being able to call himself a physiocrat, Say called himself a Smith follower, but he was one largely in name only. As we shall see, his views were really post-Cantillon and pre-Austrian rather than Smithian classical.

One crucial difference between Say and Smith was in the limpid clarity and lucidity of Say's *Treatise*. Say quite justly called the *Wealth of Nations* a 'vast chaos', and 'a chaotic collection of just ideas thrown indiscriminately among a number of positive truths'. At another point, he calls Smith's work 'a promiscuous assemblage of the soundest principles ..., an ill-digested

mass of enlightened views and accurate information'. And again, with great perceptiveness, Say charges that 'almost every portion of it [the *Wealth of Nations*] is destitute of method'.

Indeed, it was precisely Say's great clarity which, while winning him world wide popularity, lowered his stock among the British writers who unfortunately ruled the roost of economic thought. (The fact that he was not British himself doubtless added to this deprecation.) In contrast to the inchoate Smith, or to the tortured and virtually unreadable Ricardo, Say's clarity and felicity, the very ease of reading him, made him suspect. Schumpeter puts it very well:

> His argument flows along with such easy limpidity that the reader hardly ever stops to think and hardly ever experiences a suspicion that there might be deeper things below this smooth surface. This brought him [Say] sweeping success with the many; it cost him the good will of the few. He sometimes did see important and deep-seated truths; but when he had seen them, he pointed them out in sentences that read like trivialities.

Because he was a splendid writer, because he avoided the rough and tortured prose of a Ricardo, because, in Jefferson's phrase, his book was 'shorter, clearer, and sounder' than the *Wealth of Nations*, economists then and later tended to confuse smoothness of surface with superficiality, just as they so often confound vagueness and obscurity with profundity. Schumpeter adds:

> Thus he never got his due. The huge textbook success of the *Traité* – nowhere greater than in the United States – only confirmed contemporaneous and later critics in their diagnosis that he was just a popularizer of a Smith. In fact, the book got so popular precisely because it seemed to save hasty or ill-prepared readers the trouble of wading through the *Wealth of Nations*. This was substantially the opinion of the Ricardians, who ... put him down as a writer – see McCulloch's comments upon him in the *Literature of Political Economy* – who had been just able to rise to Smithian, but had failed to rise to Ricardian, wisdom. For Marx he is simply the "insipid" Say.[10]

## 1.4 The method of praxeology

A particularly outstanding feature of J.B. Say's treatise is that he was the first economist to think deeply about the proper methodology of his discipline, and to base his work, as far as he could, upon that methodology. From previous economists and from his own study, he arrived at the unique method of economic theory, what Ludwig von Mises was, over a century later, to call 'praxeology'. Economics, Say realized, was not based on a mass of inchoate particular statistical facts. It was based, instead, on very general facts (*fait généraux*), facts so general and universal and so deeply rooted in the nature of man and his world that everyone, upon learning or reading of them, would

give his assent. These facts were based, then, on the nature of things (*la nature des choses*), and on the deductive implications of these facts so broadly rooted in human nature and in natural law. Since these broad facts were true, their logical implications must be true as well.

In his introduction to the *Treatise*, which sets forth the methodological nature and implications of his work, Say begins by being critical of the physiocrats and of Dugald Stewart for confounding the sciences of politics and of political economy. Say saw that if economics, or political economy, was to progress, it must stand on its own feet as a discipline without being intimately mixed from the start with political science – or the science which sets forth the correct principles of the political order. Political economy, wrote Say, is the science of wealth, its production, distribution and consumption.

Say goes on to mention the popularity of the Baconian method of induction from a mass of facts in the formation of a science, but then adds that there are two kinds of facts, 'objects that exist' and 'events that take place'. Clearly, objects that exist are primary, since events that take place are only movements or interactions of existing objects. Both classes of facts, noted Say, constitute the 'nature of things', and 'a careful observation of the nature of things is the sole foundation of all truth'.

Facts may also be grouped into two kinds: *general* or *constant*, and *particular* or *variable*. About the same time as Stewart, but far more comprehensively, Say then launched into a brilliant critique of the statistical method, and of the difference between it and political economy. Political economy deals with general facts or laws:

> Political economy, from facts always carefully observed, makes known to us the nature of wealth; from the knowledge of its nature deduces the means of its creation, unfolds the order of its distribution, and the phenomena attending its destruction. It is, in other words, an exposition of the *general facts* observed in relation to this subject. With respect to wealth, it is a knowledge of effects and of their causes. It shows what facts are constantly conjoined with; so that one is always the sequence of the other.

Say then added an important point, that economics 'does not resort for any further explanation to hypothesis'. In short, unlike the physical sciences, the assumptions of economics are not tentative hypotheses which, or the deductions from which, must be tested by fact; on the contrary, each step of the logical chain rests on definitely true, not 'hypothetical', general facts. (It might be added that it is precisely this crucial difference between the method of economics and of physical sciences that has brought so much contumely on the head of praxeology during the twentieth century.) Instead of framing hypotheses, economic science must perceive connections and regularities

'from the nature of particular events', and 'must conduct us from one line to another, so that every intelligent understanding may clearly comprehend in what manner the chain is united'. 'It is this', Say concludes, 'which constitutes the excellence of the modern method of philosophizing'.

In contrast, statistics exhibit particular facts, 'of a particular country, at a designated period'. They are 'a description in detail'. Statistics, Say added, 'may gratify curiosity', but they can 'never be productive of advantage' if they do not indicate the 'origin and consequences' of the collected facts and this can only be accomplished by the separate discipline of political economy. It is precisely the confounding of these two disciplines that made Smith's *Wealth of Nations*, in Say's perceptive words, an 'immethodical' and 'irregular mass of curious and original speculations, and of known demonstrated truths'.

A crucial difference between statistics and political economy, Say goes on, is that the latter's general principles or 'general facts' may be discovered, and therefore may be known with certainty. The principles of political economy, wherever they rest on 'the rigorous deductions of undeniable general facts', 'rest upon an immovable foundation'. They are what von Mises would later call 'apodictic'. Political economy, indeed, 'is composed of a few fundamental principles, and of a great number of corollaries or conclusions, drawn from these principles'. The particular facts of statistics, on the other hand, are necessarily uncertain, incomplete, inaccurate and imperfect. And even when true, Say correctly notes, they 'are only true for an instant'. Again, on statistics, 'how small a number of particular facts are completely examined, and how few among them are observed under all their aspects? And in supposing them well examined, well observed, and well described, how many of them either prove nothing, or directly the reverse of what is intended to be established by them[?]' And yet the gullible public is often dazzled by 'a display of figures and calculations ... as if numerical calculations alone could prove anything, and as if any rule could be laid down, from which an inference could be drawn without the aid of sound reasoning'.

Say goes on to a blistering critique of the use of statistics without theory:

> Hence, there is not an absurd theory, or an extravagant opinion that has not been supported by an appeal to facts; and it is by facts also that public authorities have been so often misled. But a knowledge of facts, without a knowledge of their mutual relations, without being able to show why the one is a cause and the other a consequence, is really no better than the crude information of an office-clerk ...

Say then denounces the idea that a good theory is not 'practical', and that the 'practical' is somehow superior to the theoretical:

> Nothing can be more idle than the opposition of *theory* to *practice*! What is theory, if it be not a knowledge of the laws which connect effects with their causes, facts with facts? And who can be better acquainted with facts than the theorist who surveys them under all their aspects, and comprehends their relation to each other? And what is practice without theory, but the employment of means without knowing how or why they act?

Say then brilliantly points out why it is impossible for peoples or nations to 'learn from experience' and to adopt or discard theories correctly on that basis. Since the early modern era, he notes, wealth and prosperity have increased in western Europe, while at the same time nation-states have compounded restrictions of trade and multiplied the interference of taxation. Most people then superficially conclude that the latter *caused* the former, that trade and production increased as a result of the interference of government. On the other hand, Say and the political economists argue the reverse, that 'the prosperity of the same countries would have been much greater, had they been governed by a more liberal and enlightened policy'. How can facts or experience decide between these two clashing interpretations? The answer is that they cannot; that only correct theory, theory deducible from a few universal general facts or principles, can do so. And that is why, notes Say, 'nations seldom derive any benefit from the lessons of experience'. To do so, 'the community at large must be enabled to seize the connexion between causes and their consequences; which at once supposes a very high degree of intelligence and a rare capacity for reflection'. Thus, to arrive at the truth, only the complete knowledge of a few essential general facts is important; 'every other knowledge of facts, like the erudition of an almanac, is a mere compilation, from which nothing results'.

Furthermore, in arguments about public policies, when 'facts' are allegedly set against the 'system' of economic theory, it is actually one theoretical 'system' poised against another, and, again, only theoretical refutation can prevail. Thus, said Say, if you talk about how free trade between nations is advantageous to all the participants, this is accused of being a 'system', to which is opposed worry about deficits in the balance of trade – itself a system, but a fallacious one. Those who assert (as had the physiocrats) that luxury fuels trade whereas thrift is ruinous, are setting forth a 'system', and then, in an exact prefiguring of the Keynesian multiplier, 'some will assert that circulation enriches a state, and that a sum of money, by passing through twenty different hands, is equivalent to twenty times its own value' – also a system.

In a surprising and perceptive prefigurement of modern controversies, Say goes on to explain why the logical deductions of economic theory should be verbal rather than mathematical. The intangible values of individuals, with which political economy is concerned, are subject to continuing and unpredict-

able change: 'subject to the influence of the faculties, the wants and the desires of mankind, they are not susceptible of any rigorous appreciation, and cannot, therefore, furnish any *data* for absolute calculations'. The phenomena of the moral world, noted Say, are not 'subject to strict arithmetical computation'.

Thus we may know absolutely that, in any given year, the price of wine will depend on the interaction of its supply, or stock to be sold, with the demand. But to calculate the two mathematically, these two elements would have to be decomposed precisely into the separate influence of each of their elements, and this would be so complex as to be impossible. Thus:

> it is not only necessary to determine what will be the product of the succeeding vintage, while yet exposed to the vicissitudes of the weather, but the quality it will possess, the quantity remaining on hand of the preceding vintage, the amount of capital that will be at the disposal of the dealers, and require them, more or less expeditiously, to get back their advances. We must also ascertain the opinion that may be entertained as to the possibility of exporting the article, which will altogether depend upon our impressions as to the stability of the laws and government, that vary from day to day, and respecting which no two individuals exactly agree. All these data, and probably many others besides, must be accurately appreciated, solely to determine the *quantity* to be put in *circulation*; itself but one of the elements of *price*. To determine the *quantity* to be *demanded*, the price at which the commodity can be sold must already be known, as the demand for it will increase in proportion to its cheapness; we must also know the former stock on hand, and the tastes and means of the consumers, as various as their persons. Their ability to purchase will vary according to the more or less prosperous condition of industry in general, and of their own in particular; their wants will vary also in the ratio of the additional means at their command of substituting one liquor for another, such as beer, cider, etc. I suppress an infinite number of less important considerations, more or less affecting the solution of the problem ...

In short, the enormous number of imprecise, changing and quantitatively unknown determinants make the application of the mathematical method in economics impossible. And therefore those who

> have pretended to do it, have not been able to enunciate these questions into analytical language, without divesting them of their natural complication, by means of simplifications, and arbitrary suppressions, of which the consequences, not properly estimated, always essentially change the condition of the problem and pervert all its results; so that no other inference can be deduced from such calculations than from formula arbitrarily assumed.

Mathematics, seemingly so precise, inevitably ends in reducing economics from the complete knowledge of general principles to arbitrary formulas which alter and distort the principles and hence corrupt the conclusions.

But how then is the political economist, knowing the general principles with certainty, to apply these principles to specific problems such as the

condition of the wine market? Here, too, Say anticipated the brilliant conclusions of Ludwig von Mises on the proper relationship between theory and history, theory and specific application. Such applied theory in economics, Say indicated, is an art rather than a strict science:

> What course is then to be pursued by a judicious inquirer in the elucidation of a subject so much involved? The same which would be pursued by him, under circumstances equally difficult, which decide the greater part of the actions of his life. He will examine the immediate elements of the proposed problem, and after having ascertained them with certainty (which in political economy can be effected), will approximately value their mutual influences with the intuitive quickness of an enlightened understanding, itself only an instrument by means of which the mean result of a crowd of probabilities can be estimated, but never calculated with exactness.[11]

J.B. Say then relates the fallacies of the mathematical method in economics to the teachings of his great mentor, the physiologist Cabanis. He quotes Cabanis on how writers on mechanics grievously distort matters when they deal with the problems of biology and medicine. Citing Cabanis:

> The terms they employed were correct, the process of reasoning strictly logical, and, nevertheless, all the results were erroneous ... it is by the application of this method of investigation to subjects to which it is altogether inapplicable, that systems the most whimsical, fallacious, and contradictory, have been maintained.

Say then adds that whatever has thus been pointed out about the fallacies of the mechanistic method in biology is *a fortiori* applicable to the moral sciences, which is why we are 'always being misled in political economy, whenever we have subjected its phenomena to mathematical calculation. In such case it becomes the most dangerous of all abstractions'.

Finally, Say perceptively points to another problem that, then as now, leads learned people to dismiss the principles and conclusions of economics. For they

> are too apt to suppose that absolute truth is confined to the mathematical and to the results of careful observation and experiment in the physical sciences; imagining that the moral and political sciences contain no invariable facts or indisputable truths, and therefore cannot be considered as genuine sciences, but merely hypothetical systems, more or less ingenious, but purely arbitrary.

To bolster this view, the critics of economics point to a great many differences of opinion in that discipline. But so what? Say asks. After all, the physical sciences have always been rent by controversy, sometimes clashing 'with as much violence and asperity as in political economy'.

The mathematical method was not the only system of abstraction to suffer a trenchant demolition by J.B. Say. For Say was also sharply critical of verbal methods of logic that took off into the empyrean without continuing groundwork in, and repeated checking by, reference to general and universal facts. This was Say's main methodological stricture against the physiocrats. 'Instead of first observing the nature of things, or the manner in which they take place, of classifying these observations, and deducing from them general propositions' – that is, instead of being praxeologists, the physiocrats

> commenced by laying down certain abstract general propositions, which they styled axioms, from supposing them to contain inherent evidence of their own truth. They then endeavoured to accommodate the particular facts to them and to infer from them their laws; thus involving themselves in the defence of maxims evidently at variance with common sense and universal experience...

In short, a system of economic theory must not only be axiomatic–deductive; it must always make sure to ground those axioms in 'common sense and universal experience'.

In his Introduction to the fourth edition, Say levelled similar strictures against David Ricardo and the Ricardian system. Ricardo, too, 'sometimes reasons upon abstract principles to which he gives too great a generalization'. Ricardo, he charged, begins with observations founded on facts, but then 'pushes his reasonings to their remotest consequences, without comparing their results with those of actual experience'. After a certain point in the reasoning, 'the facts differ very far from our calculation' and 'from that instant nothing in the author's work is represented as it really occurs in nature'. 'It is not sufficient', Say concludes, 'to set out from facts; they must be brought together, steadily pursued, the consequences drawn from them constantly compared with the effects observed', so that

> the science of political economy ... must show, in what manner that which in reality does take place, is the consequence of other facts equally certain. It must discover the chain which binds them together, and always, from observation, establish the existence of the two links at their point of connexion.

## 1.5 Utility, productivity and distribution

In contrast to the Smith–Ricardo mainstream of Smithians who set forth the labour theory (or at very best, the cost-of-production theory) of value, J.B. Say firmly re-established the scholastic–continental–French utility analysis. It is utility and utility alone that gives rise to exchange value, and Say settled the value paradox to his own satisfaction by disposing of 'use-value' altogether as not being relevant to the world of exchange. Not only that: Say adopted a subjective value theory, since he believed that value rests on acts of valuation