for screening, and the existing computer program that generates a non-responder card for inclusion in non-attenders notes should be used to do this.

This small study confirms the views that were held by many people before the institution of the service, that in inner city areas where there is extensive mobility of people high rates of uptake will take some time to achieve.

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Clinical medicine in revolution: 1—New elements in the old regime

John Gabbay

The French Revolution totally reshaped medicine. Within three tumultuous decades much of what we now take for granted had become the hallmark of the new medicine pioneered in France. Hospitals were for large numbers of sick people to be investigated and treated; doctors examined patients routinely by techniques such as palpation, percussion, and auscultation; necropsy was a routine way of learning about the nature of diseases and explaining clinical findings; diseases were envisaged as lesions of the tissues that could be analysed experimentally with the hope of eradicating them altogether; statistical studies of patients and clinical trials were undertaken; and doctors were trained in both medicine and surgery and learnt their profession largely by working with established practitioners at the bedside. Yet before the revolution none of these statements would have been true. Moreover, there were equally fundamental changes in many other sciences and professions too. What happened to cause them?

As with any other aspect of the French Revolution the answer is always being reinterpreted. We still do not have any real understanding of how the social, political, philosophical, and economic elements were catalysed in the crucible of the French Revolution to create both a new form of medicine and a new science of the body.¹ It is not difficult to see why there is no simple answer, for as the following account will show, the crucible contained a complex mixture of seething ingredients.

Physicians' role

Physicians in eighteenth century Paris played little part in hospitals.² With their elaborate wigs and gold lace trim they depended for their living on the patronage of wealthy clients.³ Such patients did not expect, or permit, a physician to lay his hands on them. Rather, it was the physician's role to understand and advise on his client's whole way of life so as to keep him or her in good health according to a scholarly knowledge of ancient and modern writings on the body, health, and disease (box).⁴⁻⁷

By the 1780s progressive physicians were critical of the hidebound traditionalism of the medicine of the Parisian establishment. A new, more practical and entrepreneurial breed of doctor was emanating from the new courses in Holland and especially Scotland, which emphasised modern science over ancient

wisdom and applied knowledge over arid theory.⁸ Why, these doctors asked, were the old guard still persisting with their ancient precepts when European medicine was bursting with new ideas? The answer may have been that many of their élite clientele still expected the traditional approach, which might help to explain why, when that élite later came to be overthrown, the old medical values that served them also disappeared.⁶

Science of nosology

The more progressive Parisian physicians were enthused by new theories from many quarters. One of the main features of eighteenth century medicine was the widespread attempt to describe diseases systematically (the science of nosography) and to understand their causes—sometimes, as with the work of Morgagni, by postmortem dissections.⁹ Physicians

Doctors in the ancien régime

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Physician visits a hypochondriac. Establishment physicians were often the butt of satire in the ancien régime as they had been in Molière's plays—for example, *L'Amour Médecin* (box)¹⁰

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Pierre-Jean-Georges Cabanis, one of the leading doctor-turned-politicians who argued for medical reform as a means of achieving social reform. His famous book on the connections between the physical and the moral in man, though published afterwards, was in preparation during the ancien régime

Phillipe Pinel abandoned his mathematical studies to learn medicine between 1767 and 1774 before going to Paris in 1778, where he didn't practise for another 10 years. He was so enthused by meeting Benjamin Franklin at the salon that he contemplated emigrating to America²

in many European centres were trying to impose some sense of order on the bewildering array of diseases that they encountered by constructing taxonomies of diseases, known as nosologies. Taxonomies were the focus of many other sciences too—for example, it was during this period that Linnaeus produced his system for classifying plants and animals, which is still used, though his then famous nosology was more short lived. Nosologies were rife but were all found to be unsatisfactory for one reason or another.

The nosologists usually rationalised their taxonomies with some overarching physiological theory. Many referred to Albrecht von Haller's work on vivisection in the mid-eighteenth century, which had helped to explain the workings of muscles and nerves in terms of two fundamental properties, irritability and sensibility.^{10 11} His discoveries had given physicians a scientifically workable solution to the longstanding dilemma between the belief that the properties of living things depended on a soul or life spirit (and were therefore hardly amenable to scientific study)^{11 12} and the view that life was merely a result of complex machinery (which could be a dangerous view theologically).¹³ Moreover, Haller's work seemed to allow some scientific understanding of the self evident mutual effects of body and soul when a person was ill.¹⁴

"Method of analysis"

One group of physicians in Paris was also enthused by the salon of Mme Helvétius, which was fashionable among intellectuals and was also attended by many of the prerevolutionary philosophers, including visitors from abroad such as Thomas Jefferson and Benjamin Franklin.² Amid the ardent political discussion this influential group of thinkers, later dubbed the *idéologues*, argued that real knowledge must be based solely on the evidence of the senses.^{15 16} Any deeper knowledge was impossible. The only way to understand anything was therefore to examine it so as to analyse carefully the sensations that you experienced. To distinguish between roses and carnations, for example, you would analyse the softness and colour of the petals, the smell of the perfume, the occurrence of both in different habitats, and so on. Having reduced the complex array of sensations into its elements you would merely have to resynthesise them in your mind and describe the elements and their associations (no easy task) to know all that it would ever be possible to know about the phenomenon.¹⁷ An example of the influence of this philosophy—the "method of analysis"—is Lavoisier's work, published in 1789, in which he introduced the concept of chemical elements that was to revolutionise chemistry.¹⁸

Lavoisier's physician friends—men such as Pierre-Jean-Georges Cabanis¹⁹ and Phillipe Pinel—inevitably wanted to apply the new philosophy to studying disease. After all, the method of analysis, which was invented by the Abbé de Condillac in the 1740s, was derived from the ideas of John Locke, the seventeenth century English empirical philosopher, and Locke had been a close friend of and inspiration to Thomas Sydenham, who had pioneered nosography. Pinel, Cabanis, and other *idéologue* physicians reasoned that by using the method of analysis on patients they would find the key to a nosology that would stand the test of time. Unfortunately, there was no possibility of trying out such ideas as they depended for patronage on a wealthy and powerful clientele who would not allow their bodies (alive or dead) to be investigated by a physician; they were limited to analysing only symptoms, and those of only a few patients at that.

The method of analysis, however, lent itself to other applications such as statistical analysis. As early as 1776 the Société Royale de Médecine had begun

A consultation

Father: Gentlemen, my daughter's oppression increases, pray tell me quickly what you have resolved upon.

First physician: Sir, we have reasoned upon your daughter's distemper; and my opinion is that it proceeds from a great heat of blood: so I'd have you bleed her as soon as you can.

Second physician: And I say her distemper is a putrefaction of humours, occasioned by too great a repletion, therefore I'd have you give her an emetic.

First physician: I maintain that an emetic will kill her.

Second physician: And I that bleeding will be the death of her.

Third physician: I find your daughter has a chronic disease, and that she may be in jeopardy... for as much as the symptoms which she has are indicative of a fuliginous and mordant vapour, which pricks upon the membranes of the brain; for this vapour, which we call in Greek "Atmos," is caused by putrid and tenacious and conglutinous humours which are contained in the abdomen.

... So that to draw away, loosen and expel the said humours, there must be a vigorous purgation. But first of all I think it proper to make use of some little anodyne medicines; that is to say, little emollient and detensive clysters [enemas], and refreshing juleps and syrups, which may be mixed in with her barley water.

Fourth physician: Afterwards we'll come to purgation and bleeding...

Third physician: Not that your daughter may not still die, but at least you'll have done something and you'll have the consolation that she died according to form.

Fourth physician: It's better to die according to the rules than recover contrary to 'em.

Molière, *L'Amour Médecin* (1665)⁴

collecting huge amounts of data from physicians throughout France about diseases, their symptoms, and their associated environmental conditions such as topography, weather, and the quality of crops. Félix Vicq D'Azyr, who led this project, saw it as an example of how the old haphazard empirical studies of the natural courses of diseases could be consolidated by the method of analysis. It was a grandly rational and bureaucratic programme that was designed to police the health of the country and to maximise health and economic productivity.^{20 21}

Social and medical reformers

Pierre-J-G Cabanis, on the other hand, sought to tackle the problems of society by applying the method of analysis to the symptoms both of human disease and of the body politic, for he, like many *idéologues*, saw a close connection between social organisation and the incidence of disease. If people lived in poverty and oppression they were more likely to fall ill. Conversely, he argued, people's ideas and actions are the direct product of their material bodies. (It was Cabanis who said that the brain secretes thought just as the liver secretes bile.) Sick bodies could be expected, therefore, to lead to sick ideas and sick societies. Clearly, in his view, medicine had to be at the heart of social reform.^{2 19}

In the general optimism it seemed as though the efforts of a well ordered society with rational leaders could conquer all problems. As Diderot had argued in the famous *Encyclopédie*, such efforts, even if they entailed vivisection condemned criminals, would be worth while because they could help conquer disease. By the 1780s many reformers were supporting social

Jean-Jacques Rousseau advocated a return to man's natural state. In his influential novel "Émile"—written a month after "The Social Contract"—he wrote, "I swear that never having called a physician for myself, I will never call one for Émile"²³

Pierre-Joseph Desault, who crowned the achievements of the Paris surgeons in the eighteenth century by establishing hospital based training for surgical students

contracts whereby paupers in hospitals would be treated by physicians whose "genius could express itself in a new way," as they would be unfettered by the cautious restrictions placed on them in private practice and free to analyse diseases. Indeed, the rich were encouraged to subscribe to hospitals because the advances in knowledge would benefit them in the long run and the poor patients would have the satisfaction of repaying society for its benefaction and for receiving the care of physicians.²²

The progressive physicians of Paris also argued strongly for major reforms in medical teaching.²² They wanted not only to bring teaching more into line with the modern trends in, say, Scotland, but to base it on the method of analysis applied to political as well as medical theory and to the environment as well as the body. That was the way forward, they argued, for the three main aims of improving medical knowledge, professional status, and the people's health. They argued among themselves as to whether the profession would best serve those aims by becoming a more centrally controlled corporation or by becoming more egalitarian. But there was no question in their minds that all three aims required a highly educated body of medical experts, who could inculcate the rest of society with the values of the Enlightenment—that is, reason and virtue. There were, however, those outside the profession who had more radical dreams. Had not Rousseau argued that the trappings of civilisation inevitably undermined man's natural state? And was there not strong evidence that the physicians were key examples of a privileged, corrupt, self interested élite that did more harm than good to society? Wouldn't the health of the general population therefore be better served if medical education and the medical profession were done away with altogether?^{22 23}

Rise of the surgeons

While the reformers dreamed and analysed and the radicals schemed, the surgeons of Paris—now led

The amphitheatre at the Collège de Chirurgie, with seating for 1400 students

Life in the Hôtel-Dieu

The general policy of the Hôtel-Dieu . . . is to put as many beds as possible into one room and to put four five or six people into one bed. We have seen the dead mixed with the living there. We have seen rooms so narrow that the air stagnates and is not renewed. . . . Often we saw contagious and noncontagious diseases in the same wards. . . . The operation ward where they trephine, cut the stone, and amputate limbs contains those who are being operated upon, those who will be operated upon and those who have already been operated upon. The operations are performed in the centre of the room. One sees the preparations, one hears the cries of anguish of the sufferer. Those who will be operated upon tomorrow see their future sufferings. Those who have passed through the ordeal are shaken by these cries of anguish. They understand these emotions in the midst of their own inflammation and purulence. Thus their recovery and life are endangered.

Jacques Tenon, *Report on the Paris Hospitals*, 1788²

by Pierre-Joseph Desault—were taking action.²⁴ Traditionally surgeons had been the social and professional inferiors of the physicians: they were not university educated but merely apprenticed. During the eighteenth century, however, the tiny élite of top surgeons at court had wielded their influence to establish by the middle of the century a royal academy and a college of surgery with systematic courses that included dissection and necropsy. Moreover, the surgeons were highly skilled at operating, and the best of them were even performing successfully such "grande chirurgie" as end to end anastomosis after resecting strangulated hernias—and this in the days long before sepsis and anaesthesia.²⁴ Nevertheless, surgeons were still viewed as artisans rather than gentlemen, and most of them were likely to practise widely among the less privileged people and, like apothecaries, to be jacks of all medical trades. Their apprenticeships entailed several years' attachment to surgeons at one or more of the vast charitable institutions that were called hospitals but were for the needy as well as the sick, and where by 1788 many of the poorer Parisians were living and dying in often terrible conditions (box).^{2 24 25}

In 1785 Desault, having worked for three years at the Charité hospital, where surgical training was well organised, became chief surgeon at the Hôtel-Dieu, the largest hospital.²⁶ With between 2500 and 4800 patients in its 1700 beds on any one day and a reputed mortality of over 20% (compared with 13% at the Charité) the Hôtel-Dieu was already by now a training ground for many surgeons, but a chaotic one.^{24 25} Desault led the drive to formalise the training activities and—against the better judgment of the charity's administrators and religious nursing sisters—make surgical training the hospital's primary role.²⁷ By 1788 he was giving surgical lessons in a specially built amphitheatre for three hours every day to up to 500 pupils, among whom were the 100 surgeons attached to the hospital, who crowded in to watch the demonstrations, operations, and necropsies.²⁴ The eager crowds included many would be physicians. The success of the teaching had a profound impact not only on surgical training but also on the proposed educational reforms that were being designed by the *idéologues* and other progressive physicians, who must have been wondering if they would ever have the chance to put their ideas into practice. That chance came with the fall of the Bastille.

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The GMC perspective

Profile of the GMC: portrait or caricature?

Robert Kilpatrick

(1) The workings of the General Medical Council have been extensively surveyed in these pages over the past nine weeks. Dr Richard Smith's articles have contained a certain amount of basic information about what the GMC does and much conjecture and critical opinion about the way in which it carries out its work. But, surprisingly in a learned journal, he has offered little by way of hard evidence to support the many adverse comments that have been made. The quotations cited have been selective, concentrating on a group of known critics of the GMC with no visible evidence of an attempt to balance their comments with the views, just as sincerely held, of those who think otherwise. In my view these articles have done scant justice to the work of a body which carries out a task which is as vital now as it was when the GMC was first established. I must say that what I have seen of the GMC's work in my 13 years' service bears little resemblance to the body described in Dr Smith's "profile."

(2) In the space available to me it does not seem sensible to attempt to correct every error in the articles or to answer the criticisms one by one. It seems to me that it would be much more profitable—and constructive—to state positively to the profession what are the GMC's priorities for the future.

(3) Before I do that let me simply say, as it would seem from the articles that it needs to be asserted, that the GMC does not seek to stifle innovation in medical education; that it does not discriminate, in any of its procedures, against doctors with "non-European names" or indeed against any group of individuals; and, above all, that it does not act contrary to the wishes of parliament in operating its disciplinary and other procedures.

The GMC's statutory responsibilities

(4) The GMC is a statutory body, and its tasks are those given to it by parliament.¹ The principal, and largest, task has always been to maintain registers of qualified medical practitioners. From that flows all its other work, which concerns standards—the promotion

Sir Robert Kilpatrick

of high standards of medical education as a prerequisite for registration; the pursuit of action against doctors whose standards of practice are called into question; and the provision of advice to the profession on standards of professional conduct and medical ethics. All too often I hear the suggestion that the GMC should assume responsibility for this or change its procedures towards that. But any change in the GMC's statutory responsibilities inevitably—and rightly—demands extensive consultation both within and, just as importantly, outside the profession.

(5) When change is needed, and where it is in line with its statutory functions, then the GMC is not averse to change. In the 1970s it saw the need for a procedure to deal with doctors whose state of health called into question their fitness to practise. It persuaded a

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