



CONCEPT AND CULTURE IN THE MEDICINE OF THE NINETEENTH CENTURY

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A book entitled *Medicine and culture : Varieties of treatment in the United States, England, West Germany, and France* (1) was recently published by the New York journalist Lynn Payer. The reviewer who discussed this book in the Saturday Supplement of the *NRC-Handelsblad* in The Netherlands on November 5, 1988 came to the following conclusion : French doctors are Cartesian thinkers, German physicians are authoritarian romanticists, their British colleagues are friendly and paternalistic, and American medicine is reputed to be 'aggressive'.

The author gives a witty description of the variations in the interpretation of the concept disease as well as the equally numerous corresponding recommendations concerning treatment. The unsuspecting reader may be shocked to realize that there is no internationally accepted canon. Its existence is suggested, but here it seems to me that Lynn Payer has gone too far in drawing a conclusion. There are certainly standards which are applied throughout the world in conventional international medicine, but this does not mean that the concept culture does not play a role — one which cannot be overestimated — in the practice of medicine or in the concept of disease accepted not only by physicians but also by laymen. There can be no doubt that this has long been recognized and described by historians. For example, in his book *Het medisch denken* (Medical Concepts), which appeared in 1952, L. Elaut, professor in Ghent, pointed to the philosophical and metaphysical aspects of the concept disease and its strong dependence on the culture of the period (2). F.A. Sondervorst, emeritus professor of the History of Medicine of the University of Louvain, wrote a book called *De geschiedenis van de geneeskunde in België* (The history of medicine in Belgium)

(1981) in which he discussed, among other subjects, political and social considerations, the problems associated with professionalization, and the legal and moral quandaries with which medicine had been confronted in the course of time (3).

The title of my discourse refers to the notions concept and culture in medicine, and I have restricted myself to the nineteenth century. This period is currently enjoying considerable interest on the part of almost all scholars dealing with various areas of history — even art historians, who until recently considered at least the early decades of the century beneath their interest. The social historians were of course the pioneers in all this, but researchers in the fields of economic history and historical epidemiology have also turned to the nineteenth century. I shall venture to select from the very broad concept culture a few aspects with importance for my subject, i.e., the drum-roll of the military, the concepts of *natural philosophy*, the rise of materialism, and, lastly, the increase of the influence of medical thinking and practice on governments. You will undoubtedly have noticed that this list does not include the rise of the natural sciences which in all periods have been considered responsible for the concept 'progress' in the history of medicine. It would be impossible to ignore the natural sciences in a period in which the hope of mankind was set on the new paths opened by the Enlightenment to reach a better understanding of Nature and a salutary insight into health and sickness. Nevertheless, in my present context I shall not give precedence to either the natural sciences or technology.

Around 1800, Europe was caught up in the Napoleonic wars, and the influence of the waging of war was to be felt in medical care for a long time. The closure of an appreciable number of universities had dealt a severe blow to medical training. The least affected were military personnel, since the army had need of 'surgeons' (medical officers). One well-known institution was the military teaching hospital in Val de Grâce, which was opened in 1796, but training centers were also established in Berlin, Vienna, and other places on the Continent. The Low Countries followed later : in 1817 the military hospitals in Leiden and Louvain were elevated to *Grote Rijks Hospitalen ter Instructie* (large national teaching hospitals), whose main function was to train medical staff. In the still

disrupted organization of health care, this group was of great importance for the maintenance of medical knowledge and skills. Unlike the situation in the universities, where the main accent was on theoretical medicine and the students were still taught according to a traditional pattern, the young recruits were immediately exposed to teaching at the bedside, following the French model to which the Enlightenment had contributed greatly by the value assigned to observation and understanding in the art of medicine (4) (Foucault 1963). In addition, these students were given a respectable basis in the natural sciences and as graduates they were not handicapped by the age-old distinction between *doctores medicinae* and surgeons (Kerkhoff 1987) (5). Furthermore, a military hospital had the advantage that poverty was not the sole criterion for admission, as was still the case in many municipal and civilian hospitals. In the military hospital medical indications took precedence over considerations of charity and social circumstances.

In 1822, the schools of Louvain and Leiden merged to form the *Rijksweekschool voor Militaire Geneeskundigen te Utrecht* (National Training School for Army Surgeons at Utrecht). The students were subjected to military discipline as in all army institutions. Attention was given in the first place to building the military character, because 'being an army surgeon is not simply a matter of being a doctor and wearing the uniform' (Haneveld 1987)(6). But did the teaching differ essentially from that in the universities and, if so, what guidelines and concepts were applied ?

The first principle of the military approach was *basic knowledge but not even the semblance of erudition*. For achievement of this goal, teaching had to be apodictic and dogmatic and be based on rational empiricism. No doubts, no divergent precepts. The handbooks produced for this purpose were written according to these principles. In 1851, Johannes Fredericus Kerst, surgeon-major of the Utrecht hospital, published a handbook of impressive proportions that was divided -military style- into sections covering six main subjects and twenty-one subsidiary subjects. Latin terminology was scrupulously avoided : the 692 pages are in the mother tongue and some of the terminology could only have originated from military strategy. For example, hysteria is defined as 'a change of direction of the

uterus", and therapeutic procedures are stated as a series of commands, an often-cited example being the prescription of the first army surgeon, F.S. Alexander, a faithful follower of the French army surgeon F.J.V. Broussais. He directed hospital orderlies to use 'a half or a whole squadron' of leeches on his patients (7). But this did not mean that new discoveries and medicines were not included in the curriculum. Quite the opposite : during the symposium on this medical school held in 1987 in Nijmegen under the title '*s-Rijks-kweekschool voor Militair Geneeskundigen te Utrecht (1822-1865)*', from which I have borrowed most of the present information, it was clearly shown that new methods such as Wunderlich's thermometry were soon routinely applied in the hospital.

Thus, the 'drum-roll of the military' guaranteed 'no-nonsense' concepts in medicine, and partially in a period that was later to be rejected by the positivists because of the speculative thinking associated with natural philosophy. It was also the period of romantic ideas about the *levenskracht*, the life force, that irrational notion still preserved in the homeopathy introduced by Samuël Hahnemann in 1833. According to this view, disease is a phenomenon based on an immaterial principle that can be affected by external influences. However, the ideas of the vitalists should not be rejected simply as irreconcilable with rational empirical thinking in medicine. The idea of unity expressed in natural philosophy, the belief in the maintenance of an equilibrium between the life processes — as defined by Christoph Wilhelm Hufeland (1762-1836) in his biodynamic concept of medicine — strongly determined the daily practice of the physicians of that period (8). Ultimately, the physicians in the middle of the last century found themselves just as impotent in the face of sickness and death as their predecessors had been a century earlier. What benefit was provided by the advances made in the natural sciences when it came to controlling tuberculosis, and how did the discovery of the cholera bacillus help when an epidemic started? '*Pasteur of Koch, zij sterven toch*' (Pasteur or Koch, they still die) was a frequently heard saying in those days.

As an example of the vitalist school in which the unity of Nature played an important part, I should like to mention here the physician Joseph Guislain (1797-1860) of Ghent. In his work,

concept and culture are harmoniously merged. Guislain is known best for the founding of the mental hospital in Ghent, which was opened in 1857. The building itself, which was designed and furnished on the basis of his ideas about insanity and its treatment, bore no trace of the madhouse concept of the preceding centuries (the less light the better) but instead offered quietness and light as well as air and nature in the surrounding gardens. The natural-philosophy aspect of Guislain's thinking can be found in a text he wrote for his students after he was appointed professor of physiology at the University of Ghent in 1835 (9) (Van Staeyen 1988). This volume was intended as a basis for lectures on the history of medicine, a subject added to his teaching assignment in 1837. The book bore the title *La nature considérée comme force des organes* and appeared in 1846. It was not by chance that it was dedicated to his great predecessor Jean Baptiste van Helmont. This work contains most of the medical-philosophical principle on which Guislain based his concept of the genesis, the nature, and the treatment of mental diseases. Like van Helmont, Guislain accepted primary forces as subtle intelligences in the organs, i.e., the germinal force, excitability, instinct, and spirit. He did not have to resort to van Helmont's Archeus concept, but instead gave preference to the Montpellier school represented by Paul Joseph Barthez and the modish system of the Scottish physician John Brown. This was vitalism in its most extreme form, based on non-materialistic principles but nevertheless introduced and applied so systematically in the diagnosis and treatment of mental illness that it became extremely important for the improvement of the 'unhappy fate of the insane', a theme which was discussed during a workshop held in Santpoort (The Netherlands) in November 1986.

There is no need to fear opening the Pandora's box filled by the Romantics. It is true that an endless flutter of speculations will be released, including the ontological view of disease so reviled as *kakodaimon* by the scientists of the positivistic school (Schrant 1868) (10), and metempsychosis, theme of horror stories, Frankenstein's monster invented by Mary Wollstonecraft Shelley : "t' is the tempestuous loveliness of terror", according to her husband (Praz 1979) (11). As consolation for romantic medicine, the bottom of the box offers water, which like van Helmont's *humor primigenium* received

new attention from biodynamic medicine. The beneficial spas of Europe were rediscovered and were to attract sufferers from the most dissimilar diseases throughout the nineteenth century. Here it must be kept in mind that the salutary effect of the water was utilized not only by physicians but also by lay adherents of natural medicine such as Vincent Priesnitz (1799-1851) and Father Sebastian Kneipp (1821-1897), who contributed substantially to the culture of hydrotherapy (12).

Air, water, movement, and diet formed part of the routine recommendations of the nineteenth-century general practitioners, as exemplified by the great Hufeland. In his *Camera obscura*, Nicolaas Beets describes the bust of Hufeland as the principal ornament of the consulting room of the established general practitioner. Although the practitioners of natural medicine and Hufeland's followers all worshipped 'unspoiled' nature in similar ways and as the source of all life and health, Rothschild (1978) (13) pointed out that the two movements diverged to some degree. Both groups were inspired by the writings of Jean-Jacques Rousseau (1712-1778), but the idea of 'back to nature' was taken much more literally by the adherents of natural medicine than by the physicians. With the former it was more an emotional glorification of nature, full of pantheism, nature worship, and enmity for conventional medicine, including the diet of Western countries. Many of them were vegetarians and totally opposed to medicaments. This certainly did not hold for the doctors, although they too were against intemperance, excessive indulgence, alcohol, and effeminacy. Both groups believed in hardening of the body and exercise in the open air, the breastfeeding of one's own child, and the entire salemitarian program which had been revived in the eighteenth century. In the last decades of the nineteenth century natural medicine was enriched by the inclusion of gymnastics, air-baths, light treatment, and the prescription of raw food. Furthermore, the natural-medicine movement expanded into areas offering a more general reformation of life. The rule was now : only what is natural is admirable and good. Reformed clothing, nudism, vegetarianism, the protection of nature and animals, are all cultural phenomena that attracted attention in this period (14). We can follow them into our own time and find them in alternative medicine, the movement to protect the environment, and the politics of the 'green' parties.

Thus, the biodynamic concept of disease and the work of the worshippers of water, light, and air continued to lead a life of their own, even into the present. But those who, impressed by this veneration of nature, would like to assign Ludwig Büchner's book *Kraft und Stoff*, which appeared in 1855, to this category, are in for a surprise. This book seen as the bible of materialism represents a very different concept of nature and the way to solve its secrets. Scientific materialism contributed appreciably to a new concept of disease that is still considered valid today. The originator was the German physician Karl Vogt (1817-1895), who was followed by Jacob Moleschott (1822-1893) of The Netherlands and another German, Ludwig Büchner (1824-1899). These three scientists saw it as their duty to undermine belief in authority, whether in science, religion, or politics. They were strongly influenced by the work of Ludwig Feuerbach (1804-1872), who had published a powerful attack on theism in his book *Das Wesen des Christentums* dating from 1841. All of them attempted, each in his own way, to collect arguments, supplied by the natural sciences and their own medical knowledge, in support of Feuerbach's philosophy. It is known that this brought them into conflict with Karl Marx, who characterized this materialism as vulgar and therefore called his own ideology dialectic materialism (Gregory 1977) (15). The primary aim of these physicians was to educate their people by spreading scientific knowledge as well as by refuting artificial and illusory idealism in ideas about Nature. They published by preference in popular magazines like the *Allgemeine Zeitung* in which Karl Vogt placed a series of articles between 1845 and 1847 entitled *Physiologische Briefe für Gebildete aller Stände*, which was intended to serve as a popularization of physiology. The Dutch magazine *Album der Natuur* founded in 1852 was also intended as a vehicle for 'the dissemination of information about nature among cultured readers belonging to all social strata'.

The first attack on the scientific materialists was aimed at the life force, which was described by Karl Vogt in one of the first letters on physiology as 'the refuge of lazy minds ... which refuse to look more closely at what they do not understand but are willingly deceived by this apparent miracle' (16). The practising physicians were also attacked on the grounds that their maintenance of the

concept like force led them to assign rheumatic as well as psychic diseases such as hysteria and hypochondria to the lumber-room of medicine reserved for everything about which no exact information is available. The materialists considered themselves the true apostles of progress. In his inaugural address delivered in Giessen in 1847, Karl Vogt declared that 'each acquisition in commerce, industry, and agriculture is the fruit of intellectual progress, the steady perfecting of the free spirit of the natural sciences'.

Vogt was unquestionably the most radical of the scientific materialists. Both political and scientific progress could in his eyes only be achieved by revolution. The failure of the revolution of 1848 was a heavy blow for Vogt and his followers, but it inspired them to propagate their ideas more widely. In Heidelberg in 1850, Jacob Moleschott published *Die Lehre der Nahrungsmittel für das Volk*, a book full of practical hints about nutrition, giving balanced diets that could also be maintained on a small income. He even dealt with the diet of expectant mothers. His book was read throughout Europe in the original and in translation, and was reviewed with great enthusiasm by Ludwig Feuerbach, who wrote : This book by Molenschott illustrates the ethical and political importance of education for the common people. Food becomes blood, blood becomes heart and brain, (and materializes into) ideas and moral values. If you want to improve mankind, give them better food instead of sermons against sin. ... Man is what he eats." (17)

Moleschott saw the future in terms of socialism assisted by men of science. The latter would hold in their hands the keys to the distribution of 'energy and matter' over the peoples of the world. His polemic book called *Der Kreislauf des Lebens* appeared in 1852. Büchner drew heavily, and with success, on the ideas Moleschott put forward in this book. Büchner's *Kraft und Stoff* was read everywhere in the world. In his memoirs, the Russian immunologist and Nobel prize winner Elie Metchnikoff recounts how this volume was taught surreptitiously in the *lycea* in Russia and how ecstatically the young Russians welcomed the natural sciences as a liberation. They linked the positivism of August Comte, Stuart Mill, and Herbert Spencer with the 'energy and matter, light and life' of Büchner and Moleschott (Gaissinovitch 1921) (18). After 1861, when the censor-

ship was tightened and the few Russian universities could only offer these young people hopelessly antiquated knowledge, the young Russian intelligentsia set out for the German universities where they were taught the new diagnostics of Frerich and Traube and the modern basic sciences of Kölliker and Helmholtz. Here I must mention the Russian girl students who in the last years of the Belle Epoque travelled to Zürich and Geneva to study medicine at the progressive Swiss universities. Among them was Lina Stern (1878-1968), who became the first professor of physiological chemistry at the University of Geneva, and had been taught in the tradition of Karl Vogt (19).

The last point I shall discuss here is the influence of medical thinking and practice on governments and its effect on health-care policies. This subject has received considerable attention from many disciplines in recent years. Policies related to health were strongly influenced by the Hygienist movement; this influence was felt first in France and later in England under the leadership of the Utilitarian, Jeremy Bentham (1748-1832) (ten Have 1983) (20). Under the influence of liberalism and the more radical among the democratic movements, their example was followed by Germany, The Netherlands, and Belgium in the 1850s. One of the most remarkable advocates was Rudolph Virchow (1821-1902), the founder of cellular pathology but also the pugnacious liberal who was at the Berlin barricades in 1848 (21).

The population growth and marked urbanization which accompanied the Industrial Revolution brought with them an increase of infectious diseases, particularly typhus, tuberculosis, and diseases of childhood such as diphtheria. Furthermore, filth accumulated rapidly in the cities and a town like London gave off such a strong stench compounded of urine, horse dung, and other rotting material that it could be smelled from far off. Cities has been recognized as an infective factor as early as the eighteenth century by British physicians such as George Cheyne (1691-1743), but all their efforts to improve the urban environment failed to reduce the high mortality rate of the inhabitants of cities in Europe with their recurrent epidemics (22). As Vogt pointed out, the urbanization due to industrialization was seen as a potential for progress, 'at least if guided by a

positive social science based on facts', according to the Hygienists. They attempted to establish facts with the assistance of statistics as developed by L.A.J. Quetelet (1796-1874). The medical description of localities, according to the Hippocratic tradition with attention to air, site, and water, had to yield to maps, graphs, and long series of figures on mortality and morbidity. The dreaded cholera epidemics supplied impressive figures; sanitation measures such as the building of sewers, a piping system for drinking water, the institution of standards for foodstuffs, and regulations in the area of public hygiene, awaited government action (23). In 1841, the *Académie de Médecine* (Academy of Medicine) was founded in Brussels to provide the authorities with information about all aspects of public health, forensic medicine, and veterinary medicine. Such institutions formed an indispensable support for the work of the Hygienists. The first chairman of the Academy, J.F. Vleminckx (1808-1876), was also Inspector General of the Army Medical Service. In the final decades of the nineteenth century, military medicine made an appreciable contribution to the improvement of hygiene, which of course benefitted the entire population. At the same time, the various branches of medicine became professionalized, which led in 1835 and 1853 to the passage of laws pertaining to the practice of medicine in Belgium (24). This was extremely important for the maintenance of quality in medical practice and health care. The need for control was made urgent by technological advances utilized by the specialists, particularly in the fields of surgery and obstetrics. But this line of development can only be properly followed in the twentieth century.

The four facets of the very elastic concept culture dealt with here — namely the military influence, natural philosophy, the new materialistic physiology, and positivistic thinking in an industrialized society — have of course only been touched on briefly, but I have attempted with this short review to make it clear that a concept of medical thinking and practice is not reached solely via science and experience; rather, the society — in its widest sense — of any epoch determines what the physician, and the layman as well, thinks about sickness and health. The patient too has a conception of his own disease that is equally determined by culture and period. Even the present brief glance at natural medicine was sufficient to show that

the sick do not always resort to the medical profession but, especially in a period when society is undergoing radical changes, tend to turn to healers who have not had an education recognized by that society. In the nineteenth century all this was enhanced by the conflicting effects of the benefits and afflictions of the Industrial Revolution. From Biedermeier to Belle Epoque the pattern persists: on the one hand the astonishing discoveries made by our scientific heroes and joyously welcomed by the rebellious materialists, and on the other hand the complaints of physicians and laymen the 'unbalanced development of human nature' which cannot mature properly in a society that has departed from the laws of natural biology. This balance was taken into consideration in the formulation of the list of wishes submitted to the politicians : better living and working conditions, better educational facilities to train nurses and doctors, and greater social security in sickness and in health. In the final years of the Belle Epoque many of these wishes became the objectives of politicians and associations, which led to the building of hospitals and the establishment of clinics for tuberculosis, child care, and birth control. This too reflects the culture of a society, in the same sense as the strict discipline of the military unquestionably contributed to advances in medicine and hygiene.

Let us return to Lynn Payer, the author of *Medecine and Culture. Varieties of treatment in the United States, England, West Germany, and France*. After travelling through these countries she modified to some extent her original impression that in the past European medicine was determined mainly by folklore. She was very surprised to find that certain treatments used in Europe but not in favor in the United States, such as mud-baths and hydrotherapy, apparently gave good results. Some alternative medical methods are forbidden in America but may be applied in Europe, and vice versa. She attempted to gain more insight into the differences in accepted indications and the use of surgical procedures in various countries, and gave the highest marks to French surgery because of the "subtlety" of the operations. Her countrymen are considered to wield the surgical knife the most energetically. In her view, science generates data but the culture determines how those data will be used. Up to a certain point we can accept this view, but it does not mean that the standards now applied by the informed layman to evaluate the

practice of medicine are not equally culture-bound. In our time we often have need of historical awareness, insight into a still recent period when everyone was regularly confronted with diseases and mutilations bearing witness to chronic suffering and permanent disability. Europe and the United States are parts of the world where these street sights have become relatively rare, thanks to the efforts and achievements of earlier societies. From Biedermeier to Belle Epoque the healers gave precedence to the attainment of equilibrium, unity, and harmony with man's environment. This will continue to be the case in our time, too, no matter what concepts of health and sickness are developed within the changing culture.

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