CHAPTER ONE

INDIVIDUALISM IN PUBLIC HEALTH:
A REVIEW

Lurking behind every public health debate over approaches and methods are philosophical disagreements. Nijhuis and Van der Maesen suggest, “Most theoretical debates about the pros and cons of public health approaches are confined to the methodological scientific level. Philosophical foundations such as underlying ontological notions are rarely part of public health discussions, but these are always implicit and lie behind the arguments and reasoning of different viewpoints or traditions”.¹

There are two mainstream social philosophical traditions, namely methodological holism (MH) and methodological individualism (MI), which undergrid approaches in public health. In the former (or “collectivistically oriented social philosophy”), the focus is primarily on the social constellations (age, sex, social class, and race/ethnicity) or places and social positions in society. Following the views of, for example, Marx² and Durkheim³, “the Gestalt... is primarily the social constellations of which individuals are part”.⁴ The tradition is to “go outside the body” to develop an alternative social and environmental

perspective on health, where socio-economic, cultural and political factors are imbued into the analysis of diseases and death in a society. In this tradition, in the past, a person was thought to be a unified whole, and illness and disease were regarded as the product of imbalances in the general harmony between the individual and the world. Since life itself was viewed in cosmological terms, the spiritual dimensions were not excluded from the realm of concern for health. From primitive society to medieval times, these notions generally prevailed and constituted the holistic view of health. Although it was not exactly the same for different cultures, and changed somewhat over time, this remained a reasonably-accurate generalisation of a prior understanding of health and disease. This tradition, in the field of public health, can be traced back to the works of Virchow and Max Von Pettenkofer in Germany, Francois Melier and Louis Rene Villereme in France, William P. Alison in Scotland and William Farr and John Snow in England. They have illustrated the close relationship between poverty and disease and deaths, a connection much evident in contemporary debates in public health.

In the second and the dominant tradition of research-methodological individualism (or "individualistically oriented social philosophy"), the emphasis is on individuals, based on a positivist conception that by understanding individual behaviour, it becomes possible to understand the total. Following, for example, Pareto\(^5\) and Weber\(^6\), "the total (the Gestalt) is considered to be the


outcome of actions and motives of distinct individuals". This of course ignores the fact that society is an open system with structures and emergent powers and therefore cannot be fully understood by merely desegregating it into its component parts. This conception is rooted in Cartesian model where the metaphor for the body was a machine.

The intellectual history of medicine/health has been traditionally an important component of medical historiography. A study of the development of ideas about health and disease, their relation to each other in time, their diffusion over space, and indeed influence on historical events, has been for long the backbone of medical historiography. Historians and physicians, especially the latter, are interested in elucidating medicine's professional continuity and marshalling the aid of the past for present theories and procedures. The perspective acquired in such an approach provides a sense of expansion or "growth" of medicine.

In concentrating on the genesis or reception of ideas, medical history must take into consideration the climate of opinion or Zeitgeist of particular historical periods. The analysis of the causes and effects of intellectual change demands consideration of the social context in which these processes take place. Ideas should no longer be examined in isolation rather in relation to an environment that includes social, cultural and political components. Viewing medical history, and

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especially medical theories, against the backdrop of changing forms of disease is not a novel approach. However, before discussing historiography, it is necessary to deal with its most archaic form: mythology.

Mythology is the antipode of history. Since nobody thinks or acts without some picture of the past, one is apt to accept a historical myth where one cannot rely on historical knowledge. Where history is lacking, mythology takes its place and those who disdain history are among the foremost victims of mythology.

MEDICINE AND HEALTH IN MYTHOLOGY

According to legend, Asclepius, the healing god of the Greeks, learnt his art from the centaur Cheiron and bequeathed it to the physicians, the “sons of Asclepius”. In ancient Egypt, the Gods themselves were credited with authorship of sacred medical texts. Indian surgeons, in support of their claim that surgery was the oldest of all branches of medicine, referred to the divine Ashvins, who had reunited the head and trunk of the decapitated god - Yajna.

In all these myths, there is a desire to trace the origin of medicine back to the gods and a very remote past. The old is sacred, and what the gods have invented is above human criticism. Man may have misused the invention and may have spoilt it, but in itself, it is good and pure. To the mythological way of

thinking, the whole development of medicine may appear as a fall from original greatness. This is particularly the case with the reformers, who intend to bring to light again the old and essential truth. Thus, Paracelsus opens the defence of his own life and work with the following myth:

Whereas God suffered the spirit of medicine to emerge in its fundamentals through Apollo, through Machaon, Podalirius and Hippocrates, and suffered the light of nature to work a darkened spirit, exceeding wonderful great works, great Magnalia, great Miracula, were performed through the Mysteries, Elixirs, Arcana and Essences of nature, and medicine were marvellously conceived in a few pious men, as was told above. Whereas, however, the Evil One with his corn cockles and his weeds suffers nothing to grow for us in an undefiled wheatfield, medicine has been darkened by the first spirit of nature and has fallen among the anti-physicians and has become so entangled with persons and sophistries, that no one has been able to advance as far in the works as Machaon and Hippocrates did.12

Thus, the myth serves as justification, whether of the profession as a whole or of a special doctrine by sanctifying its origin. With the decline of the religious form of mythological thinking, imagination in a more rationalistic garb takes over the same function. A theory of the origin of medicine, which is now advanced, sounds plausible, and is yet based on belief rather than on fact. The earliest rationalistic myth of this kind is to be found in the book On Ancient Medicine of the Hippocrates collection. The author wants to prove that none of the newfangled philosophical systems of his time can be considered as a reliable basis for medicine. Instead, he claims that:

Medicine has long had all its means to hand, and has discovered both a principle and a method, through which the discoveries made during a long period are many and excellent, while full discovery will be made, if the inquirer be

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competent, conduct his researches with knowledge of the discoveries already made, and make them his starting-point.\textsuperscript{11}

The criterion of a myth in the sense indicated is not whether eventually it will prove true or false. A historical theory tries to make a coherent picture out of a set of historical data, and it stands and falls with its supporting facts. A myth, on the other hand, steps in where sufficient historical data are lacking. Its function is to support a living faith without or even against historical evidence. Therein, lies its strength and its weakness, its use and abuse.

**MEDICINE AND HEALTH IN ANCIENT AND MIDDLE AGES**

When philosophy conquered mythology, medicine too became imbued with the spirit of speculation. The Hippocratic physicians speculated on the structure of the body, the functions of the organs and the causes of disease. In the realm of health/medicine, therefore, they had the same approach as had the pre-Socratic philosophers regarding the universe.

Speculation tends to culminate in opinions, which never quite sever their bond with the individuality of the thinker. This is most clearly seen in the history of philosophy, which presents itself as a series of systems. The same is true of medicine and health as long as medical thoughts remain speculative. It is, therefore, not surprising that the first history of medicine is a collection of the

opinions of the physicians, who lived in the era of Hippocrates. A pupil of Aristotle, Menon, prepared this collection for Aristotle, who was accustomed to cite and analyse the opinions of his predecessors so that by agreement or refutation he might elucidate his own position. In other words, doxographical method proves vital wherever philosophy or science tries to reach truth by dialectical argument.

Throughout Antiquity, and even far into modern times, the dialectic method remained alive with doxography as its necessary partner. Doxography does not represent a record of what previous generations have already known, but what they have opined and pretended to know.

The importance of doxography was greatly enhanced by the development of medical sects from the 3rd century B.C onwards. Opinion of the individuals had been included along with the basic tenets of the sect to which the individual belonged. The dogmatists believed in the value of anatomical and physiological research for the understanding and proper treatment of disease. Their opponents, the empiricists, denied the possibility of even finding the obscure causes of disease and instead placed their confidence in experience. Then, at the beginning of the Christian era, a third sect, that of the methodists, arose. The methodists were satisfied with grouping diseases into one of the three conditions: status strictus, status laxus and status mixtus. The fight between the sects lasted far into late Antiquity and medical authors had to declare their adherence or opposition to the sects. Thus, Celsus in the preface of his work *On Medicine* gave a historical
sketch of the development of medicine up to his own time. The emphasis of his preface was laid on the dogmas of the three sects and their main representative. The aim of the work was the clarification of Celsus’s own attitude. The views which he finds nearest to the truth “are neither wholly in accord with one opinion or the another, nor exceedingly at variance with both, hold a sort of intermediate place between diverse sentiments, a thing which may be observed in most controversies when men seek impartiality for truth, as in the present case”\(^1\)

The skilful historical form, which Celsus gives to his exposition, should not cloud the fact that doxography of the sects is as little bound to historical understanding or even exact chronology, as is doxography of individual opinions. In a small book *On Sects for the Beginners*, Galen outlines the sects and his own relationship with them with scanty reference to dates and historical circumstances. Not very long after Galen, the opinions of the sects became largely a matter of the past. With the ascent of Galenism, medicine/health appears much more unified than before. If Galen is blamed for the tyranny of his ideas exercised for over one thousand years, he might also be praised for the cosmopolitan character of scholastic medicine. It is first the opposition to, and then the destruction of the Galenic system, which again split medicine into sects. Just as with Luther the unity of the Catholic Church was decisively broken, so with Paracelsus- the *Lutherus medicorum*- the unity of Galenism was destroyed. Thereafter, the split ran between Galenists on the one hand and Chemists on the other. A hundred

years later, under the impact of new discoveries and Cartesian philosophy, Galenism succumbed altogether. In its place, there arose many systems, beginning with latrophysics and latrochemistry. The controversial spirit of eighteenth century medicine was almost as strong as that permeating Galen’s work. In fact, it represented a state of medicine in which thinking and practice were still dependent on philosophical differences. Thus, doxography was relevant even up to the early nineteenth century. However, with the advancing century, health/medicine approached the positive sciences. Opinions and dialectic arguments inside medicine were replaced by scientific theories and experimental or statistical proofs. Once again, medicine appeared cosmopolitan and unified. In this situation, therefore, doxography did not have the same function as in previous times. Its functional utility now was to give an account of those philosophical and social ideas that struggled over the course, which medicine as a whole, ought to take.

Historiography of medicine consists not merely of the exposition of opinion and theories, but also, other forms of historical endeavours, notably biography and bibliography. The great name of Hippocrates has stimulated biographical attempts since Antiquity. Hippocrates, rightly or wrongly, has been acclaimed as the founder of rational medicine, a keen observer and a humane physician. His corpus of writings consists of about sixty works written between 430 and 330 B.C and is regarded as the beginning of scientific medicine. In any event, biography centres on real or pretended greatness. Paracelsus is the great heresiarch admired or condemned for his cosmic view of man and disease. John
Hunter is the great surgeon scientist, whom, curiosity and the zeal for factual knowledge, drive to body snatching and experimentation with his own health. In all these cases, there is one condition, which must be fulfilled. The life of the man (whose biography is being written) must appear as an outstanding example, be it of individual stature or of a general condition. He is considered great because through him the lives of many others are endowed with meaning.

Pre-Socratic Greek philosophers made the first attempts of which records have been preserved, to give rational explanations for man’s external environments. Around 500 B.C, Alemaeon of Croton included environmental factors, such as water and location in his definition of health and disease:

Health is the equality of rights of the functions. wet-dry, cold-hot, bitter-sweet and the rest; but single rule among them causes disease; the single rule of either pair is deleterious. Disease occurs sometimes from an internal cause such as excess of heat or cold, sometimes from an external cause such as excess or deficiency of food, sometimes in a certain part, such as blood, marrow or brain; but these parts also are sometimes affected by external causes, such as certain waters or a particular site or fatigue or constraints or similar reasons. But health is the harmonious mixture of the qualities.\(^{15}\)

The first complete statement about the influences of seasonal and environmental factors on health is found in the Hippocratic treatise *Airs, Waters and Places*, which was considered a prognostic guide for a physician who came to a new locality. Hippocrates wrote in *Airs, Waters and Places* that:

Whoever wishes to investigate medicine properly should proceed thus: in the first place, to consider the seasons of the year and what effects each of them produces. Then the winds, the hot and cold especially such as are common to all countries and then such as are peculiar to each locality. One should consider most attentively the waters which the inhabitants use...the mode in which the

\(^{15}\) K. Freeman (1948) *Ancilla to the Pre-Socratic Philosophers*, Oxford University Press, Oxford, pp. 40-41.
inhabitants live, and what are their pursuits, whether they are fond of drinking and eating to excess, and given to indolence, or are fond of exercise and labour.16

If one analyses *Air, Waters and Places* it soon becomes apparent that it contains a schematisation based upon certain assumptions. Fundamental is the belief that the change of seasons exerts a direct influence on the human body and its diseases. Therefore, it is important to know when these changes will occur, and this can be done by observing the rising and setting of the stars.17 By changing the quality of the humors, through the agency of the four qualities viz. heat, cold, wetness and dryness, the four seasons normally exert strong influences upon the bodies of individuals. Winter is predominately cold and wet, summer hot and dry, autumn dry and cold, and spring, the ideal season, is a moderated equilibrium of all four qualities. Under the influence of the seasonal qualities, the humors of the human body increase or decrease. For example, in winter, there is a normal increase of phlegm in the body because of super abundance of cold and wetness in the physical environment i.e. more phlegm is generated by the presence of these qualities and diseases, which are characterised by the excess of this humor, are therefore more likely to occur.

In addition to the seasons, other external factors also affect the body through their quality. For example, various combinations of hotness, coldness, wetness and dryness depending upon their source, characterise the winds. The

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17 *Airs, Waters and Places*, chapter-2, Leob Classical Library, p. 73.
winds, further more, are classified to correspond with the seasons, and the inhabitants of towns, which face towards winds of known qualities, are prone to certain characteristic diseases. Towns facing south and exposed to hot, wet winds contain residents of flabby physique with a superabundance of phlegm, which rearranges their digestive organs, makes them subject to chronic diseases like fluxes, diarrhoeas and dysenteries and produces epilepsy, since there is likely to be too much phlegm in the brain. The town facing north and exposed to cold, dry winds are just the opposite. Their sinewy, spare bodies are troubled with “costiveness” and acute diseases like pleurisy. Towns facing the rising sun are like spring in that the heat and cold are moderated, and the diseases resemble those of towns with a southern situation but are less severe. Most unhealthy are towns facing the west (which resembles autumn) because of the great daily variations in temperature and humidity in the morning and afternoon.  

The water supply of a town is also categorised according to its source. East, once more, is signalled as the preferable direction towards which a deep flowing spring should face, such waters being sweet, clear, light and healthful, in contrast with the noxious, stagnant surface water, which brings diseases characterised by excessive heat and dryness. Waters originating from rocks containing certain metals also possess the same hard, heating nature. Rainwater is preferable to that from melted ice or snow, since the clear, light, sweet part of the water has been separated during the process of freezing, leaving the muddy, heavy part. Urinary calculi are caused by the gradual coalescence in the bladder of solid

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18 *Airs, Waters and Places*, op. cit., chapter-3 and 4, pp. 73-83.
matter, which originated in the residue from impure waters. Based on these general ideas, the treatise lists many diseases that are caused by the conditions indicated. The first part concludes with the admonition that grave dangers to health accompany the solstices and the equinoxes, since these, bringing about abrupt seasonal changes, alter the form and constitution of disease.

One knows what the fate of these ideas has been, but it may be instructive to examine more precisely the development whereby the ancient assumptions were discarded. First, it is important to remember that until modern times, Airs, Waters and Places was always considered to contain information necessary to physicians. Indeed, it was always regarded as an integral part of the Hippocratic Corpus. It seems obvious that in the Greek view, the causes of good health were both internal to the body and external in the sense that, medical intervention in the social and physical environment was necessary. Roman Medicine accepted the Greek pattern. However, under the great physician Galen, the empirical content of medicine was on the rise and the transition from religious to scientific orientation in the conception of health and disease began. Galen tried to combine two trends, the empirical as well as the rationalistic. This very fact may explain why his doctrine dominated medicine for nearly 1500 years. In his encyclopaedia of the medicine of that time (20 volumes), he pointed out that, the foundation of

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20 Ibid., others dangers dates back were the Rising of Sirius Arcturus and the Setting of the Pleiades, see chapter-11.
21 Airs, Waters and Places (1934) op. cit., chapter 26, Heft-3, Leipzig.
medicine should be (a) experience (*peira*) and (b) the direct certainty of the intellect (*logos*).

Galen later on was accused of being too speculative, indulging in teleology. However, he practised a renascence of Hippocratism, enriched by many new remedies. In his *Methodus Medendi*, he demonstrated, with numerous practical examples, the fundamental value of the methods of elimination based on refined indication and performance. Such contributions as “on diseases, which can be cured by vivisection” or “indications of purging” indicate an acutely empirical bent of mind.

Strangely enough, in contrast to Hippocrates, Galen’s writings have been read very little during the last 150 years, and this is certainly to one’s disadvantage. There is also no translation of Galen’s complete work into a ‘modern’ language. Understandably he must have been an unusually successful physician in his practice, which should be reason enough to study his writings again.

**ALTERNATIVE CURES IN THE MIDDLE AGES**

The Middle Ages is said to be characterised by conservatism and the following of tradition rather than by new developments. Religious and humanistic philosophical interests often prevailed over direct observation of nature, finally degenerating into speculative scholasticism. There were of course, many outstanding practising physicians in Europe and among the Arabs by the sixteenth
century. Nevertheless, for a while medicine tried to make the theories of Galen still more precise and systematic, so that finally it was driven to an almost mathematical degree of apparent exactness. Thus, rationalism went to another extreme and other forms of cognition were lost at that time. “Scientific” medicine became petrified and remote from life and nature. This was the situation met by Paracelsus and by Ambrose Pare, both living in the sixteenth century. Both were eminent practitioners, fighting against the narrow-minded “scientific” medicine of that time.22

Everything that did not fit into the dogmatic system of Galen and his followers (e.g. Avicenna) was considered “unscientific”. On the other hand, extensive and successful therapy had developed among the “barber-surgeons” and in lay medicine, which was often effective, where scholarly medicine declared itself helpless. This is not to forget the extremely rich traditions of medicine existing in other cultures.

An interesting study done in the Middle Ages is regarding the miraculous cure of the king of France. He had been suffering from a malignant fever and dropsy and was declared a hopeless case by the physicians of the court. Finally, he was abandoned to the empirics, which meant in this case, lay healers or “quacks”. They administered an emetic and the king recovered within a few days. The textbook of Ambrose Pare is full of such surprising cures, especially

involving stubborn cases of arthritis. He used intricate methods of purgation and counter-irritation.

Paracelsus violently attacked the rigid dogmatism of the universities of his time. He was convinced that an enormous amount of practical wisdom had been collected in folk medicine and by practical wound surgeons. Moreover, he had to his advantage a tremendous knowledge of herbs and of alchemy. He claimed to have cured severe cases of arthritis with preparations of gold, mercury and antimony. His claims were based on practical success, but the hyper-rationalistic theorising medical schools of that time did not even want to try his methods. It did not seem to them dignified and "scientific" enough to use such simple methods of experience. They preferred to declare that there is no cure for arthritis, because these so-called empirical methods do not fit into their narrow and rigid system of theories. Many patients were thus discouraged unnecessarily, and often enough driven into the arms of lay healers.  

Paracelsus also reported that he had learnt from empirics how to break up gallstones and renal calculi into sand with vegetable and mineral drugs and thus to promote their elimination. This was confirmed later on by many practitioners (e.g. Hufeland), but has been ignored by modern scientific medicine, although the health resorts also achieved similar cures.

PHILOSOPHICAL ROOTS OF MODERN MEDICINE

A new increase in the rationalistic approach to medicine occurred in the seventeenth century, which was also called the “century of natural science”. Physics and chemistry at that time were proclaimed as the dominant sciences, even for the treatment of the sick. Thus, iatro-mathematics, iatro-physics and iatro-chemical medical schools of that century bear their eponymous names from these disciplines. At that time too, exactly as happens today, they considered their methods of natural science as very progressive, exact and infallible although they appear rather primitive now.

Medicine was integrally involved with the development of mechanistic science. Starting with Kepler and Galileo’s observations of the solar system, the centuries old dialectics between the “Platonic-Pythagorean tradition and Renaissance Naturalism versus the Mechanical or Natural Philosophy began to be resolved in favour of the latter”. Renaissance Naturalism or Vitalism had upheld the union of spirit and matter in the world; it saw underlying essences reflected in all of nature. In supplanting medieval religious metaphors about disease, however, the discourses of modernity provided for their secular replacement. In the case of the human body, the new metaphor was the machine. Early medical scientists such as Vesalius and Harvey saw the body merely as the homologue of machine, i.e. structured similarity. Harvey noted, “From the structure of the heart, it is clear

that the blood is constantly carried through the lungs into the aorta as by two clacks (valves) of water bellows to raise water".\textsuperscript{25} He further wrote:

\textit{The mechanism of circulation was less important in understanding the body than was the vitalistic idea that the heart and blood together forming a single functioning unit which is the very seat of life.}\textsuperscript{26}

Indeed, it is not entirely surprising that Harvey’s model of the circulation of blood was to have acted as a metaphor for Physiocrats, modelling the economy as a circulation of goods and services. It is perhaps not coincidental that the founder of the Physiocratic school of classical economics was a physician. The battle between the ancient and moderns was fought, and the work of Vesalius, Harvey and others established progress, at least in anatomy and physiology. Galen has been blamed for having assumed the existence of pores in the septum of the heart, only to satisfy his theory. But Harvey whose theory postulated the existence of capillaries has been lauded for his fearless logic. His physiological work has been purged of Aristotelian categories to make him appear as a modern laboratory man, pure and simple. The middle ages have been dismissed and ridiculed because they showed little progress and abounded in superstitions, but the question as to why men at that time thought so differently from us, if indeed they did, has not been seriously raised.

It is nevertheless interesting to note that at this time (period of mechanical or natural philosophy) even as there was substantial progress in the field of medicine, the concept of the health of people, of populations as a whole, which is

\textsuperscript{25} Harvey cited in Ibid., p. 90.
\textsuperscript{26} Ibid., p. 91.
the heart of public health theory, was yet to make an appearance. This was to come later with the consolidation of modern nation states, development of ideas in classical political economy and the tools of statistics.

The growth of medicine at the time of Enlightenment is part of the general struggle of science against orthodoxy and superstition. Where this aim still exists today, the form of struggle too has preserved its usefulness. The doctor, who combats superstitious treatments will point out that they are rooted in ignorance. When narrow-minded prejudice hampers the freedom of experimental research, history will be used as a weapon adducing the instances in which experiments paved the way to progress. Enlightenment, as a period has passed, but the need for enlightening is still with us and so is its historical helpmate. The history of science, external circumstances, and the lives of the physicians should not be neglected, but they are of secondary importance. What is primary to the understanding of the how, why and what of medicine of that time or for that matter of any time, is the philosophical traditions which had a deep impact on various aspects of life and society. For example, Kantian critical philosophy profoundly shaped the character and the course of German medicine, just as the French philosophy of ideology determined the development of a distinct clinical medicine in France.\(^{27}\) Kant's critical writings were beginning to achieve a wide circulation after 1790. Physicians viewed him as an enemy of dogmatism, one who was leading human reason back to its true vocation: self-enrichment through

a genuine knowledge of the world of experience. In Kant's epistemology, the entire world of experience was actually a product of the human mind, which, acting like a filter, screened and ordered the sensations according to its own structure. His conception of this pre-existing mental grid was rather complex. Sensations from external objects were perceived by the understanding with the help of so-called *a priori* concepts such as time, space, and causality. Thus, the empirical data were arranged into a spatio-temporal and causal frame of reference with the help of these *a priori* concepts, which had no independent existence of their own. They were merely elements that could be used only as moulds in order to shape the world of experience, thereby providing the necessary forms in which knowledge could be acquired and understood.

Hence, Kant insisted that nature, considered as the complex of objects of possible experience, had to conform to the *a priori* concepts of understanding in order to be experienced at all. In this view, the so-called "laws of nature" were not objective entities with an independent existence and validity of their own, but were roughly mental constructions useful in handling experience. The conclusion, therefore, was that nature constituted a unity so far as it was a system of necessary, interconnected phenomena, and natural laws were imposed by understanding on the complexity of appearances.

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28 K. Sprengel cited in Ibid., pp. 145-158.
29 I. Kant cited in G. B. Risse (1972) *op. cit.*
30 I. Kant cited in G. B. Risse (1972) *op. cit.*
The second aspect of Kant’s epistemology that attracted and challenged many physicians was the new concept of “science”. For the critical philosopher, to deal with all of nature in a “scientific” fashion was to make some efforts towards bringing order into the multiplicity of phenomena. Only systematic unity could elevate ordinary knowledge - for Kant a mere aggregate or “rhapsody” of notions - to the rank of a “science”.31

Thus, Kant concluded, the concept of natural law and order depended on a priori synthesis, which occurred in the human mind by the action of reason.32 Kant’s reason (vernunft) had a formal and logical function: trying to reduce the variety and multiplicity of knowledge acquired by understanding (verstand) to a small number of principles.33 For this purpose, human reason directed the ideas and judgements of understanding towards a coherent unity. To be sure, this systematic abstraction lay in the nature of reason itself, not in the objects of our knowledge.

In the end, therefore, reason was responsible for the appropriate systematization of knowledge, which culminated in the establishment of a number of apodictically certain, and necessary a priori principles.34 Kant called such a system a “pure science”.

31 Ibid.
32 For this problem see the following secondary source, which helps to clarify Kant’s idea, M. Robert (1963) The Problem of the Unity of the Sciences: Bacon to Kant, Toronto, pp. 123-143.
33 I. Kant, op. cit.
34 Ibid.
Kant’s ideal of “pure science” based on a priori principles strongly appealed to physicians. There are physicians who dream of an a priori medicine, commented a German observer, “these men pretend to walk on the stilts of transcendental philosophy from the limited area of medical appearances to the infinite field of a scientific and transcendental medicine”.35

The synthesising activity of human reason postulated by Kant could not be avoided, and therefore, better and more experiences should be gathered to insure the success of the rational experience. Without ever realising, the ideal of a “pure science” medicine would in time achieve a higher vantage point among the empirical or pseudo-sciences.36

W.J. Von Schelling conceived of a supreme “science” of medicine. In spite of criticisms and warnings issued by clinicians and philosophers, the idea of a medical “science” based on irreducible vital principles proved an irresistible temptation to those practitioners who sought medical certainty for their ideas of etiology and pathogenesis.37 Therefore, Schelling’s philosophical formulations38 became extremely popular in early nineteenth century Germany. They satisfied precisely the physician’s yearning for an overall synthesis of natural events, making allowances for the latest chemical and electrical discoveries.39 Crucial,

36 Schmid cited in G. B. Risse, op. cit.
39 Schelling was decisively influenced by his friend Jena, the physicist J. W. Ritter who applied his physiology and the naturalist F. X. Baader who was concerned with gravity and physiology cited in G. B. Risse, op. cit.
however, was the fact that such a view of the intimate structure of nature allowed a glimpse of all final origins of life and the essential conditions for its existence, both deemed indispensable prerequisites for the constructions of a true "science" of medicine.

To be sure, Schelling's comprehensive efforts to project into nature a series of laws merely discovered through philosophical reflection was quite different from the previous Kantian attempts to establish a "science" of medicine. Instead of moulds of thought, philosophy assumed a much broader role.

In Schelling's view, physicians and scientists were truly capable of a far superior knowledge of nature, if they were willing to grasp through philosophical reflection, the leading ideas after which the entire natural world is fashioned. Once these fundamental principles had been apprehended, one could erect, by simple deduction, a complete set of necessary propositions into which all appearances could be harmoniously placed. First, the supreme philosophical endeavour was to recognise the framework of basic natural ideas. This was to be the genuine foundation for a future natural science and medicine. Philosophy remained the proper tool for approaching final causes from Kant's grid of the understanding to Schelling's mental reflections. Philosophical thought guided medicine in its search for the indestructible pillars on which a truly "scientific" framework could be confidently erected.

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In retrospect, the German stress on the "science" of medicine based upon the general laws of nature and organic life was appropriate. The preoccupation with problems of etiology and pathogenesis rather than clinical symptomatology and pathological anatomy reflected an insight worthy of recognition. The latter were merely variable effects of a process triggered by a specific cause. Unfortunately, the basic sciences that could have furnished the needed knowledge for such an endeavour — physiology, biochemistry, and bacteriology — were largely undeveloped or still non-existent at the turn of the eighteenth century. Without their support, the effort to achieve a scientific status for medicine was doomed from the onset, and extensive philosophical speculations were unable to provide a suitable alternative. Hence, German medicine lapsed into obscurity at the beginning of the nineteenth century, overshadowed by the new French medical approach that stressed bedside phenomena.41

Rene Descartes revolutionised the outlook of science and introduced a fundamentally new paradigm of embodiment. Attacking the Aristotelian and magical views of nature that were popular in his day, he banished all animation and teleology from the natural realm, attributing such properties to the creator, the God alone. The human body was, for him, identified with a passive nature. As such, it appeared as mere res extensa, manifesting no intelligence or power of self-movement. These activities were ascribed to the mind, res cogitans. The essence of self and the divine aspect of human being was merely a machine driven

by mechanical causality and susceptible to mathematical analysis like any other component of res extensa.

Descartes intended his philosophy to bear medical fruit. In his Discourse on Method, he resolved to dedicate his life to the advancement of medicine\(^42\) and followed through in human physiology. Even in his Philosophical Meditations and Principles of Philosophy, he attempts to show the relevance of his metaphysics of mind body interaction to vexing medical problems as the "phantom limb" phenomenon and the effects of peripheral nerve blockage.\(^43\)

Though Descartes's theories of pineal gland transmission and his hydraulic model of the human body were soon out-moded, it must be said that he fulfilled his early dedication to medical advancement. His metaphysics of embodiment did more to permit the achievements of modern medicine than could any particular scientific theory.

By purging the body of spontaneity, wilfulness and occult desires, Cartesian dualism did away with all properties that might impede the mathematical-causal analysis of physical functioning. Viewed as a machine, the body can be tested experimentally and blueprinted in detailed anatomical study. Beginning his Treatise of Man, Descartes said that he could imagine a model of men:

... (it) will be composed, as we are, of a soul and body; and I must firstly separately describe for you the body...; I assume their body to be but a statue, an


\(^43\) Ibid., p. 293.
earthen machine, formed intentionally by God to be as possible like us.... We see clocks, artificial; fountains, mills, and similar machines which, though made only by man, lack not the power to move, of themselves, in various ways; and I think you will agree that the present machine can have even more sorts of movements than I imagined and more ingenuity than I have assigned, for our supposition is that it is created by God.\textsuperscript{44}

The first apparent scientific paradigm of health/medicine originated with the development of the machine model of the human body.\textsuperscript{45} This new science began for the first time to map out in detail the internal workings of the human body. The mechanistic view analysed living things as sets of mechanical parts such as cogs and pulleys driven by a heart-pump. The development of Newtonian physics had as much to contribute to this as it did to the development of all social science disciplines in general and to classical political economy in particular. Newton provided a unified theory of matter based on accurate experiments and elegant mathematics. Careful observation and precise mathematical elaboration, together, led to an all-embracing generalisation, extending from the smallest particle of matter to the largest corporeal aggregate. He presented a universe of particles in motion, acted on by the forces about which there might be some dispute, to be sure, but which are amenable to mathematical treatment. This universe comprised of people, who were considered machines and where a sick person was compared to an ill-made clock. Empiricists like Hobbes, Bacon and Descartes provided the philosophical and ideological groundwork behind such a


model of a human being. Descartes believed that the human body worked like a
machine, a machine that performs all the physiological functions of a man:

I want you to consider (he concluded) that all these functions in this machine
follow naturally, automatically, from the disposition of its counter weights and
wheels; so that to explain its functions it is not necessary to imagine a vegetative
or sensitive soul in the machine, or any other principle of movement and life
other than its blood and spirits agitated by the fire which burns continually in its
heart and which differs in nothing from all the fires in inanimate bodies.46

The metaphors derived from Newtonian physics are evident here.
Nevertheless, going further, Descartes argued that the human body not only
worked like a machine but also that the mind and the body of a given individual
could be separated into two substances - one “corporeal” or material and the other
“incorporeal” or immaterial.47 With this conception, “health” came to be seen as
the perfect working order of the human organism, likening the human organism to
an automaton (a self-propelling machine).48 Moreover, the methodologies of
pathology and diagnostics that developed from this view (and continues to
dominate the practice of medicine today) consider illness to be both natural
(biological) and occurring on an individual basis. Treatment, therefore, is pursued
on an individual bio-chemo-surgical basis, relegating the recognition and
implications of social causes of illness to secondary importance, though even this
secondary recognition must be viewed as an “ad hoc modification”.49

46 R. Descartes, op. cit.
47 Ibid.
78.
The Aristotelian paradigm with its belief in the organic unity of living things, had dominated medieval society. There were intimate links between Aristotelian physics and the organisation of feudal society and the downfall of the feudal society was a precondition for the replacement of the Aristotelian view of the physical world by the Newtonian one. Aristotle's theory of the Universe aimed to characterise and explain processes as they naturally occur. It was a contemplative theory aiming to understand the world as it behaves when not interfered with. It did not aim to produce a way of changing the natural order of things. The core of his physical theory was that the earth is stationary at the centre of a spherical finite universe, with the sun, planets, and stars orbiting around it in a hierarchy of orbits. The physical universe of Aristotle is a hierarchical one. Everything is in its natural place or moves towards its natural place according to the natural order of things. And this, the generally accepted view of universe in feudal societies of medieval Europe, was gradually replaced by the rising bourgeois class who needed to free itself from the impediments that feudal society put in its way and emancipate itself through economic advancement. The science of physics founded by pioneers such as Galileo, Kepler and Newton provided the rational basis for the new system. "Mechanistic medicine", which is part of this new system, made possible those aspects of medicine that have been genuinely successful either in prevention or in cure of disease or in providing symptomatic relief. The tragedy of course was that while Descartian principles assumed that an account of knowledge and the methods appropriate for its acquisition can be deduced in a general way from the nature of individual humans, the same was
also applied at the level of populations in the now dominant mode of public health.

However, the adoption of a mechanistic paradigm limits the nature and boundaries of what is conceived as the medical task. Thus, scientific medicine ultimately became curative, individualistic and interventionist, objectifying patients and denying their status as social beings. For Jewson, scientific medicine has to pass through three basic stages (which he sees as corresponding to three successive modes of production of medical knowledge) viz. "bedside medicine", "hospital medicine" and "laboratory medicine". As Doyal notes, "these stages provide a useful means by which to understand both the development of medical thought and practice and also its relationship to broader social and economic changes".

"Bedside medicine" which dominated Europe from the Middle Ages until the late eighteenth century was available to a minority of population such as the wealthy, and worked on a patronage system with patients choosing those particular doctors whom they believed could help them the most. Until then, the "new science" (science i.e. after Renaissance) had little impact on medical practice and the patron and doctor relationship was a very important determinant of the content of medical treatment. The patient's choice or in Jewson's

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52 L. Doyal, *op. cit.*
terminology, the “sick man” was the centre of medical concern, the patient being treated as a whole.

By the beginning of the nineteenth century, with the advent of the Industrial Revolution, the concomitant process of mass urbanisation “hospital medicine” came into existence and dramatic changes occurred in medical practices. Mass urbanisation led to unhealthy cities and the consequence was the establishment of big hospitals for catering to the health needs of the working population. Client-centred therapy was losing its dominance, and doctors and even midwives were becoming more organised and professional.

Patients were no longer individuals with their own particular set of symptoms and problems, but came increasingly to be seen as “cases”- the disease became more important than the sick person. It was the loss of the self in a complex social system where professionalism and individualism were on the rise. “Hospital medicine” shifted during this period to diagnosis and classification and the Aristotelian flavour, which had characterised the theoretical base of hierarchical individual centred therapy, was sidelined. Illich has beautifully described the significance of this process:

If “sickness” and “health” were to lay claim to public resources, then these concepts had to be made operational, ailments had to be turned into objective diseases. Species had to be clinically defined and verified so those officials could fit them into words, records, budgets and museums. The object of medical treatment as defined by a new, though submerged, political ideology, acquired

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54 N. K. Jewson (1976) op. cit.
the status of an entity that existed quite separately from both doctors and patients.56

Thus, with the advent of “hospital medicine”, the emphasis shifted away from a belief in the classical Platonic model of health as a harmony among the body’s processes or the Galenian concept of disease as a disturbance of the total system to what is called “localised pathology”. This was the period of development of new instruments and sophistication in descriptive anatomy and pathology accompanied by the use of statistical analyses. Socio-economic and environmental factors were obviously ignored in this mechanised approach. With the development of the germ theory of disease and the works of Pasteur and Koch in the late nineteenth century, demonstrating that specific diseases could be caused by the invasion of specific micro-organisms, arose what Dubos has named the “doctrine of specific etiology”.57 Thereafter, the emphasis in medical practice swung even more sharply towards the individual “case”58. The germ theory’s placement of blame for most sickness and disease on the individual served to exculpate society from responsibility. Discoveries came thick and fast, and scientists soon were announcing bacterial causal factors for non-bacterial diseases, such as yellow fever, malaria and in veterinary medicine, hog cholera. The “proximate” cause - the germ - became the sole factor of disease causation. More distal causes, of predisposition, physical and social, were ignored. It effectively diminished the role of social and economic factors in disease causation.

and has remained the hallmark of the dominant mode of epidemiological practice to the present day. Scientific medicine or "hospital medicine", focused on the biological problems of the individual in order to understand and treat most diseases. The diagnosis of illness was made on an individual basis and treatment or therapy was individually prescribed.\textsuperscript{59}

Laboratory medicine was observed as the final victory of the mechanistic world-view and established itself in the latter half of the nineteenth century, after the discovery of the germ theory. As Doyal puts it:

At that time, a struggle for supremacy between Vitalism, (a brief in the inviolability and unity of living organisms) and mechanicalism (which finally got the upper hand) was going on. By the middle of the nineteenth century, mechanism had become dominant, and experiments and vivisection had replaced comparative anatomy as the basic method for advancing medical knowledge.\textsuperscript{60}

At the same time, doctors became more active interventionists in the physiological processes rather than being passive observers. Medicine was on the way of gaining full recognition as a science. As Doyal, further notes:

In the latter half of the nineteenth century, both histology and physiology were developed extremely rapidly, and the individual cell came increasingly to be seen as the central focus for understanding ill health. Cell theory and controlled clinical trials did not immediately provide any new therapy, but they did form the basis for twentieth century developments in clinical medicine.\textsuperscript{61}

This biological reductionism, instrumentalism, elementalism or positivism widened the gap between the doctor and the patient. It has been observed that this


\textsuperscript{60} L. Doyal (1981) \textit{op. cit.}

\textsuperscript{61} Ibid., p. 33.
version of the natural world was a victory of the industrial bourgeoisie, which established the positivist conception of science and of medicine. Medicine has been characterised by what Jewson calls a shift from "person-oriented" to an "object-oriented" cosmology. As Doyal puts it, in this view of health, "it is always individuals who become sick, rather than social, economic or environmental factors which cause them to be so". Similarly, Stark has commented:

Disease is understood as a failure in and of the individual, an isolatable "thing" that attacks the physical machine more or less arbitrarily from "outside" preventing it from fulfilling its essential responsibilities. Both bourgeoisie epidemiology and medical ecology .... consider "society" only as a relatively passive medium through which "germs" pass en route to the individual.

There are serious problems with this approach, which still dominates contemporary medicine. The physician deals with an individual patient (already a socially determined being). The patient is not an abstract being, but of a certain age, sex, race and class and has internalised a specific historical experience from childhood to adulthood. Thus, taking a purely medical history individuates the patient; instead, the disease or injury from which the patient is suffering should be perceived and received as part of a collective experience in a particular historical, cultural and social setting. These latter circumstances are as much a part of the

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63 L. Doyal, op. cit.
64 E. Stark (1977) "Introduction to the Special Issue on Health", Review of Radical Political Economics, Vol. 9, p. V.
cause, and should be part of the treatment, as purely medical facts (the medical facts themselves are social historical facts). Thus, the essence of scientific medicine’s treatment of disease discourages a proper understanding of disease by excluding from consideration the most relevant internalisation of the external world by the patient. As Wartofsky puts it, “Human ontology cannot be reduced to asocial or ahistorical biology without doing violence to the very specificity of human biological structure and function itself”.67

By abstracting disease from its social framework and reducing it to the biological sphere, social conditions could be and were ignored. Scientific medicine became consistent with and indeed legitimated capitalist development by integrating a model of healing with the social structure; in doing so, scientific medicine has obscured the relationship between disease and the nature and form of social development. Today, heart disease, cancer, and automobile accidents are posited as “diseases of civilization”.68 They are conceived of as necessary consequences of economic growth and industrialism, when it is uncertain that this is so.69

The major concern of scientific medicine, consequently, is to render the body more functional in its struggle to adapt to the potentially antagonistic forces


of nature. In contrast to the World Health Organization’s (WHO) definition of health as a “state of complete physical, social and mental well being and not merely the absence of disease or infirmity”, here health tends to be defined in functional terms, as the absence of disease. Defining of health and illness in a functional way is an important example of how a capitalist value system defines people primarily as producers. It is concerned with their “fitness” in an instrumental sense, rather than with their hopes, fears, anxieties, pain or suffering. In the therapeutic relationship, the task of the patient is to understand the signs and symbols of the problems as the physician reads them and thus to accept the medical definition of both the problem and the solution. Taussing calls this process:

...the creation of a “phantom objectivity” with regard to disease, a process of “denying the human relations embodied in symptoms, signs and therapy”, a process by which “we not only mystify social relations, but we also reproduce a political ideology in the guise of a science of apparently ‘real things’- biological and physical thing hood.”

Further Taussing concludes:

Medical practice is a singularly important way of maintaining the denial as to the social facticity of facts. Things thereby take on a life of their own, sundered from the social nexus that really gives them life, and remain locked in their own self-constitution.

From the many factors that contribute to disease- social, environmental, physical, psychological- modern medicine tends to isolate a single physical factor

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70 L. Doyal *op. cit.*, pp. 34-35.
72 Ibid., p. 373.
and label it the "cause". Dubos\textsuperscript{73} explains that Pasteur and Koch's conceptualisation of germ theory created experimental conditions that were sufficient to bring the host and parasite together to produce disease and thus minimised the influence of other factors. The focus on the doctrine of specific etiology and germ theory facilitated the transformation of health into a commodity, amenable to sale in the market, fulfilling the basic need of the capitalist system for commodification. With this commodity fetishism, health problems become problems of the body, which require consumption of some form of technological treatment, rather than a reflection of social relations. Navarro describes beautifully this "need for consumption, consumption that reflects a dependency of the individual as something that can be bought, either a pill, a drug, a prescription, a car, or the pre-packaged moon".\textsuperscript{74}

However, it is important to mention at this juncture, that, while on the one hand, medicine and health were becoming increasingly mechanised and commodified, on the other hand, there emerged in the nineteenth century, an alternative approach to health i.e. epidemiology, where the population perspective became a focal point of health discourse.

**Epidemiology and Health**

The devastation wrought by industrialization and urbanisation process was

\textsuperscript{73} R. Dubos, \textit{op. cit.}

\textsuperscript{74} V. Navarro (1976) \textit{Medicine under Capitalism}, Prodist, New York.
impossible to ignore even in the first half of the nineteenth century. The relationship among disease, urbanisation, living condition and working conditions was becoming widely acceptable even outside the hospitals. The socio-political and socio-economic events set the stage for the development of modern epidemiology, sociology, geography, psychology and anthropology.

The development of epidemiology is rather different from other social sciences. Its "greening period"\textsuperscript{75} is placed in the mid 1800s, a few decades before the classics of Durkheim and Weber were published. Lilienfeld and Lilienfeld\textsuperscript{76} describe Louis as an important founding father of modern epidemiology. As early as 1833, Louis pioneered the importance of statistical methods in medicine. The construct of mortality is even older. John Graunt, the unlikely haberdasher, published \textit{The Bills of Mortality} in 1662.\textsuperscript{77} In those early days, the discovery of the aetiology of infectious diseases was an important purpose of epidemiology and its development was closely connected to that of public hygiene and vaccination policy. Gradually, its scope and purpose expanded beyond the area of treatment to the prevention of disease as well. After the Second World War, the emphasis on population, based epidemiological research came to be on the rise. Traditionally epidemiology has been associated with disease prevention. The Oxford Dictionary defines epidemiology as "that branch of medical science which

\textsuperscript{75} A. M. Lilienfeld and D. E. Lilienfeld (1980) \textit{Foundation of Epidemiology}, Oxford University Press, Oxford.
\textsuperscript{76} Ibid.
treats epidemics". The term epidemic can be replaced with the phrase "major public health problems". The roots of today's epidemiology can be detected in the work of William Farr, who established a tradition of careful application of vital data to problems of public health and other broad public concerns. At the time, works by Virchow and Max Von Pettenkofer in Germany, Francois Melier and Louis Rene Villereme in France and William P. Alison in Scotland exposed the deficiency of the sanitary reform approach and emphasised that poverty and destitution were the primary sources of disease. Edwin Chadwick's immense investigation published in 1842 as The Sanitary Conditions of the Labouring Population of Great Britain illustrated the close relationship between sanitary reform and disease. Frances Smith, however, sharply criticised Chadwick and his colleagues. She said:

The new men, Southwood Smith, Chadwick, Dr. Neil Arnott and other Benthamite political economists, had by the late 1830s become thoroughgoing mechanists. They projected a closed circle of causation, which avoided the moral questions of deprivation and redistribution. They argued that the "source of high mortality in cities" was "not due to want of food and greater misery... but in the generation of effluvial poisons". This conveniently narrow doctrine came to be influential for the next 100 years, and beyond.

Further, for example, Alison was critical of narrowly oriented causal connection of health and sanitation. Alison and others considered sanitary reform desirable and necessary but not sufficient; it needed to be accompanied by a

general improvement in the standard of living of the lower classes.\textsuperscript{81} Friedrich Engels in his \textit{Condition of the Working Class in England} published in 1844\textsuperscript{82} reversed Chadwick's causal order to show that poverty caused disease. Like other leaders of the Sanitary Movement, Engels saw health as a social and political value in its own right. Many of the major accomplishments of public health resulted from epidemiological studies in the classic tradition of John Snow's investigation of cholera, and it is at this level that the science and model of epidemiology have perhaps most clearly demonstrated their worth. The removal of the Broad Street water pump handle plays a part in the decline of the cholera epidemic in 1854. Other than Snow's "shoe-leather epidemiology" (a title originated from his house-to-house survey in the South London districts) and the development of a water-borne theory of cholera transmission, in addition to his pioneering role in anaesthesia, it is the dot-map showing the location of cholera deaths to identify the source of the outbreak, which makes him a hero in medical geography. He showed that cholera was transmitted by drinking water polluted by sewage. His findings led to the elimination of cholera by the provision of pure water supplies many decades before the isolation of the causal organism".\textsuperscript{83} Thus, serious physical hazards were identified, legislation restricting these hazards and demonstrating improvements in the health of the population as a whole were


observed. Even here however, the overriding requirement that an epidemiological study examine only those factors which are conventionally regarded as objective, has effectively eclipsed many other aspects of the conditions under study. It has appeared to be enough to investigate the connections between a given illness (or range of illnesses) and the factors which are suspected of being associated with the conditions under consideration. John Snow understood this need to adopt a more holistic approach and thus, he stands out as one of the tallest figures of the sanitary movement. Donald Cameron and Ian Jones point out that:

Snow used statistics to help to confirm a theory he had already established, by providing supporting evidence he could not conveniently demonstrate in any other way. He did not use the statistics to provide the theory, as Farr had done in his demonstration of an association between the incidence of cholera and height above the level of the Thames... Snow brought all his biological, medical and social knowledge into his enquiries and within medicine, he deployed clinical, pathological, microscopical and chemical skills and knowledge and of course, he expressed these skills logically and where appropriate with arithmetical analysis.... His epidemiology was by no means one-sided.\(^\text{84}\)

The dominant paradigm of understanding regarded epidemiology as "essentially an inductive science".\(^\text{85}\) Most modern epidemiologists are so convinced that there is an epidemiological method and that it is essentially arithmetical, probabilistic and empirical that they even miss the point of John Snow's contribution to the science. In doing so, they trivialize it as they trivialize epidemiology. In the dominant practice of epidemiology, the causal concept is essentially a reductionistic, mechanical one (the concept of disease agent/risk factor). It is disease-centred (disease being a bio-medical concept) and concerned


with biological inferences. Thus, epidemiology as presently constituted, fails to face up to the question of how to promote health at the most basic and essential levels.

There is perhaps no more obvious illustration of medical care at a basic level than that of the sort discussed by Rifkin\textsuperscript{86} in her text on community health initiatives in the developing world. There seems little doubt in these contexts about which conditions—both of the environment at large, and of the individual in particular—constitute the present major threats to health and well-being.\textsuperscript{87} There is, however, considerable dissension concerning priorities between those embedded, for instance between the technologically complex and status-laden medical tradition of scientific medicine, and those involved in "low technology" health care. In this context, Rifkin\textsuperscript{88} cites Ross as distinguishing three types of community health development, i.e. the "external" approach, the "multiple" approach, and the "inner resources" approach. These approaches, as generally perceived, involve progressively more grass-roots commitment, and correspondingly less professional or "expert" diagnosis and mobilisation with regard to health "needs" and "problems" (so progressing from "top down" to "bottom up" approaches and planning). Of these approaches, it might at present be argued that epidemiology as usually understood services informs the "top


\textsuperscript{87} M. King (1966) *Medical Care in Developing Countries: A Symposium from Makerere*, Oxford University Press, Oxford.

\textsuperscript{88} S. B. Rifkin, *op. cit.*
down” approach and enables “experts” to act (with whatever level of “community” consultation or involvement) on “problems” identified in professional terms. Social epidemiology, as this type of research is called, received emphasis during the War on Poverty programmes of the early 1960s and, at the same time, gave some scientific justification for their inauguration and continuance.\textsuperscript{89,90} Studies indicated differences in occurrence, severity, and length of specific illness based upon a person’s income, race, age, and especially class. While these findings became widely accepted within the discipline of epidemiology, unfortunately they had very little impact on medical education. Yet, just associating a relationship between social characteristics, disease incidence, and health status does not fully explain the totality of those relationships. To the extent that social epidemiology was content to remain on a descriptive level, it became merely a form of demography.\textsuperscript{91} Though social epidemiology allows for the use of “multifactorial” explanation for disease occurrence, it still tends to rely upon a notion of specific etiology and sees social and economic factors as contributive rather than causative.

Epidemiology is a discipline, which is concerned with health and its maintenance in a population. By definition, it is interdisciplinary in nature and calls for skills beyond disciplinary grids, which many social science approaches


\textsuperscript{91} I. Waldron, \textit{op. cit.}
fall short of, whether in sociology, anthropology or psychology. Although the social basis of epidemiology was recognised, the actual operationalisation of this was in the form of discrete disciplinary inputs such as Medical Sociology, Medical Anthropology, and Health Psychology etc. In disease centric epidemiology, social factors are hardly used in conceptual frameworks. The current practice is that the factors under study are conceptualised by a specialist, e.g. nutritionists, immunologists, who are trained not to understand the phenomenon of health in its entirety, but to offer intervention and solution and not provide explanation when medicine is put into practice. The role of social sciences in health was however to provide explanations and offer solutions in the practice of medicine. Nevertheless, in spite of its limitations, one can debate over the positive contribution and the changes wrought in the approach to health by areas such as medical sociology.

**MEDICAL SOCIOLOGY AND HEALTH**

Medical sociology emerged as a specialisation within sociology in order to study illness and medicine. Strauss differentiated between sociology "of" medicine and sociology "in" medicine. Sociology of medicine focuses on the study of medicine to illuminate some sociological concerns for e.g. the patient practitioner relationship, the role of professions in society and so on. Sociology in medicine, on the other hand, focuses primarily on a medical problem e.g. the sociological causes of disease and illness, reasons for delay in seeking medicinal aid, patient
compliance or non-compliance with medical regimens and so on. For legitimising the cause of public health and the role of sociology in medicine, exponents like Virchow in Germany, Chadwick in England and Coronel in The Netherlands emphasised the contribution of economic, social, political, psychological and cultural factors in health and illness. Virchow, a social medicine physician, called for measures such as free public education, separation of church and state, higher wages, progressive taxation, cultural autonomy for natural minorities, agricultural collectives and full employment.

Rosen traces the term "medical sociology" back to early nineteenth century Germany, related to Grotjahn's Social Pathology published in 1911. However, it is clear that the emergence of medical sociology as an organised discipline occurred in the years after the Second World War, in the nineteen fifties. The "boom" in medical sociology, the sharp increase in systematic development of the field in terms of both quality and quantity occurred during the 1970s. One thing should be made very clear and that is, medical sociology is, in a sense, synonymous with dominant American sociological paradigms. The prominent figures included Talcott Parsons, Evert Hughes, Robert Merton and August Hollingshead. Their interest in medicinal sociology derived from broader sociological issues. Parsons's work on medicine as a social institution, and illness

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as deviance, was an illustration of a larger theory of society. Merton used medicine as an example of a profession in the study of professions. Hughes's work was done within the framework of occupational sociology and Hollingshead's focus was on social class. Her Parsons took a structural functionalist perspective while the Chicago School stressed symbolic interactionism. However, Parsons's functionalist orientation suffers from a particular form of ahistoricism. In capitalist society, functional health, subordinated as it is to the process of accumulation, refers only to the capacity to contribute to that process, not the capacity to perform any role or task, which is considered non productive.

In the attempt to sketch the hopes and aspirations of medical sociology, both in the past and in the present, one is immediately confronted by an essential problem i.e. the difficulty of finding a valid definition. Medical sociology can be described as the study of social factors in health and illness (referring to illness as the experience of becoming and being ill and its behavioural counterparts), or as the construction of medical - health and illness, reality and of social factors in health care. Older definitions of medical sociology as sociology of medicine and sociology in medicine and more recent emphasis on health and illness itself are


In general terms, it can be argued that the main goal of medical sociology is to improve the conditions of living for human beings. This includes analysing inequalities in the distribution and frequency of diseases as well as in the provision and utilisation of health care services. It had been hoped that demonstrating inequalities would prove to be an incentive to get rid of them and that medical sociology could provide not only the findings but also the scientific prerequisites for working and practicable solutions in health and social policy that were indicated by such findings. The analysis of medical institutions, of the providers of health care and of their socialisation, as well as of health behaviour of people, was to bring about predictive statements that would facilitate planning. Thus, many medical sociologists aimed at improving the efficacy of medicine and its institutions by analysing them, a task, which is in accordance with the humanitarian commitment of medical sociology.

This implies that medical sociology cannot be pursued without an orientation to values. This branch of knowledge, therefore, could be expected to base itself on the ethic of humanitarianism, and to be committed first to the social welfare of individuals in terms of health as well as of illness. This would inevitably lead to conflicts both with medicine and with its most important and most powerful representatives, the physicians. Nor was it surprising that medical sociology, in its striving to emphasise the social dimensions of illness, turned out to be receptive to, if not even on occasions enthusiastic about psychosomatic
medicine as well as the mental health movement in general.

However, in spite of a considerable body of empirical findings, one still has a limited understanding of unequal distribution of diseases. After Parsons, it was perhaps justified to expect a "grand theory" to be attainable also in medical sociology. Unfortunately, it has restricted itself to "theories of middle range" and to even narrower hypotheses, which in the last few years have tended to hide behind the pretentious concept of "models". The health services system has not achieved greater efficacy and efficiency as a result of medical sociological research. The scientific parochialism that is common in this field is indeed deplorable. What is needed then, are cross-cultural surveys that would lead to critical questions. There are a number of authors, who recognise this to be a real dilemma, but even among the most critical, medical value scales are often accepted without question. A similar situation exists in the field of social policy. Gouldener notes:

The state ... does not only require a social science that can facilitate planned intervention to resolve certain social problems; it also requires social science to serve as a rhetoric, to persuade resistant to undecided segments of the society that such problems do, indeed, exist and are of dangerous proportions. 99

Evaluation in this case, according to Gouldener, serves to prove the inefficiency of former elites and of traditional procedures. The Welfare State is using it to unmask these inefficiencies. However, in a welfare state the process does not go beyond that. It satisfies itself just by maintaining the status quo.

Medical sociology then becomes a mere instrument of propaganda for the welfare state or a producer of ideologies, as formulated by the German sociologist Lepsius.100

Gouldner’s insights, which he may owe to his experiences in health services research, are highly relevant for medical sociology. They reveal vast potential but hidden dangers in medical sociology. Since many medical sociologists have so readily adopted medical conceptions of values, it should not be difficult to induce them to adjust to other ideologies provided only that they can be convinced - or can convince themselves - that all is done only “for the patient’s best”. In the foregoing, we have discussed some substantive aspects of medical sociology. What remains is a critical analysis of the literature itself, that is to say, a review of the publications as such. Medical sociologic writing has turned out to be a rather one-sided affair. After some tentative steps in different directions, the scientists have concentrated on a few selected areas, much like directing a wide stream into narrow channels while leaving the rest of the country, by far the larger part, untouched, a dry and unexplored waste. The torrents of publications on the topics of death and dying, health behaviour, or labelling theory, which have flooded the fields of medical sociology, are an example. Above all, it perhaps needs to be emphasised that the focus in much of this literature has been on medicine rather than the health of populations.

Feminist critics have viewed the medical profession as a largely

patriarchal institution that used definitions of illness and disease to maintain the relative inequality of women by drawing attention to their weakness and susceptibility to illness. They have also accused the medical profession of taking control over areas of women's lives such as pregnancy and childbirth that were previously the domain of female lay of practitioners and midwives. The dominant current in medical sociology failed to provide spaces for such criticisms. Most critiques advocate the “empowerment” of patients, encouraging people to “take back control” over their own health by engaging in preventive health activities. These were the trends of medical critiques in 1970s and into the 1980s. It remains the dominant approach in 1990s for feminist writers, for those who adhere to a Marxist perspective on health and illness and proponents of the consumerist approach to medicine. The problem with the orthodox critiques such as those of Illich is the rather black and white portrayal of scientific medicine. As largely detracting from, rather than improving people's health status, of doctors as intent on increasing their power over their patron rather than seeking to help them, and of a patients as largely helpless, passive and disempowered, their agency crushed beneath the might of the medical profession. "The asymmetry of relationship is exaggerated to the point that the lay client becomes not the beneficiary but the victim of consultation". In their efforts to denounce medicine as an oppressive force, orthodox critics undermine


the positive contributions of medicine. They also fail to acknowledge the ambivalent nature of the feelings and opinions that many people have in relation to medicine or the ways by which patients willingly participate in medical dominance. This complicity inevitably incorporates latent conflict and resistance, "a shifting balance between manifest collaboration and tacit opposition in relations between those who come for help and those who profess to provide it".104 Therefore, there is no struggle for power between the dominant party (doctors) and the less powerful party (patients), but rather, there is collusion between the two to reproduce medical dominance. Foucault’s writings emphasise the positive and productive rather than the repressive nature of power.105 Further, Foucault argued that the very seductiveness of power in modern societies is that it is productive rather than simply confining:

What makes power hold good, what makes it accepted, is simply the fact that it doesn’t weigh on as a force that says no, but that it traverses and produces things, it produces pleasure, forms knowledge, produces discourse. It needs to be considered as a productive network, which runs through the whole social body, much more than as a negative instance, whose function is repression.106

From this perspective, medical power may be viewed as the underlying resource by which diseases and illness are identified and dealt with. The power that doctors have in relation to the patient, therefore, might be thought of as a facilitating capacity or resource, a means of bringing into being the subjects “doctor” and “patient” and the phenomenon of patient’s illness. From this

105 D. Lupton, op. cit., p. 98.
perspective, doctors are not considered to be “figures of domination”, but rather “links in a set of power relations”, “people through whom power passe(s), who are important in the field of power relation”.¹⁰⁷ Unlike orthodox critiques, Foucauldian perspective argues, therefore, that it is impossible to remove power from members of the medical profession and hand it over to patients. Power is not a possession of particular social groups, but is relational, a strategy that is invested in and transmitted through all social groups.¹⁰⁸ The orthodox critiques tend to view members of the medical profession as consciously seeking to gain power and status and limiting other groups’ power, largely by eliciting the state’s support. In contrast, Foucauldian scholars tend to argue that the clinical gaze is not intentional in terms of originating from a particular type of group seeking domination over others. There is not a single medicine but a series of loosely linked assemblages, each with different rationalities.¹⁰⁹ People are constantly urged to conduct their everyday lives in order to avoid potential disease or early death. As a result, “sociologically speaking everyone lives under the medical regime, a light regime for those who are not yet patients, stricter according to how dependent on doctors one becomes”.¹¹⁰

Neither the orthodox critique nor the Foucauldian perspective has adequately taken account of the mutual dependencies and the emotional and psychodynamic dimensions of the medical encounter, preferring to rely upon a

¹¹⁰ A. de Swan, op. cit.
notion of the rational actor. Yet, as it has been argued, a recognition of the "irrational" and contradictory aspects of the relationship that lay people have with members of the medical profession goes some way to explaining why it is that "power, after investing itself in the body finds itself exposed to a counter attack in the same body".111

PSYCHOLOGY AND HEALTH

The day-to-day practice of psychological researchers in mainstream, bourgeois psychology is governed by "variable model". Under this model, the subject matter of psychology is conceived of as a universe of actually or potentially measurable variables, the relation among which forms the basis for all of the discipline's scientific propositions and laws. The rise of capitalism was at the same time the rise of the middle class, the "bourgeoisie". The prevailing social scientific theories and their underlying philosophy will reflect these bourgeois values. Psychology in general and health psychology in particular, is not an exception. Health psychology is the offshoot of this bourgeois, positivist psychology. It is claimed that psychology and medicine have a long history of collaboration and at least psychology's involvement in health and illness goes back well over a century. The emergence of health psychology took place at a time when it became apparent that the leading causes of death were no longer acute infectious diseases, but had been replaced by chronic illness, said to be closely related to particular

111 D. Lupton, op. cit., p. 110.
types of individual behaviour and lifestyles that developed with the growth of a consumerist bourgeois culture. This was the first set of events that deepened the involvement of psychologists in health care. The second set of events that helped to shape the new sub-discipline of health psychology and behavioural medicine came from within psychology and involved the development of behaviour modification that is, changing behaviour by manipulating reinforcement in order to obtain a desired behaviour. The third event was the interest in biofeedback, which is a process whereby information about such physiological conditions as heart rate or brain wave activity is made available to the person so that she/he can learn to gain control over those responses. Researchers such as Brown and Miller indicated “increased physical control could be learned for involuntary as well as voluntary responses”. 112

These three are considered important causes in the development of the new sub-discipline of health psychology. In simple terminology, health psychology is an attempt to understand relationships between what people think, feel and do about their health problems. As far as definitions are concerned, several definitions have been proposed, perhaps the most frequently quoted one is that by Joseph Matarazzo. He defines health psychology, as “the aggregate of the specific educational, scientific and professional contributions of the discipline of psychology to the promotion and maintenance of health, the prevention and treatment of illness, and the identification of etiologic and diagnostic correlates of

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health, illness and related dysfunction". This definition was modified to include psychology's contribution to the health care system and health policy formulation. Psychology claims to be an interdisciplinary field of scientific enquiry. Nevertheless, it remains one, which investigates person-oriented health problems such as smoking, obesity, dental hygiene etc. with a reductionist paradigm of individual psychology.

With the development of health psychology, a new popular health consciousness pervaded in the western countries and even among the elite of the developing countries. This new health consciousness comprises of a more general heightened awareness and interest in health. This often includes environmental and occupational health concerns as well as a concern for personal health enhancement. A focus on personal health and individual life style modifications may co-exist with and even act to stimulate attempts to change social conditions detrimental to everyone's health. As Katz and Levin and Gartner and Riessman point out with respect to self-care and self-help, there are numerous examples of politically activated groups that identify with these ideas. As an ideology that promotes heightened health awareness, along with personal control


and change, it may prove to be beneficial for those who adopt a more health-promoting life style.\textsuperscript{118} However, the danger of this approach is that it continues to serve the illusion that individuals control their existence. It obviates the issue of inequality and class differentials that determine an individual’s socio-economic location and its impact on health. In the Foucauldian tradition, discussed in the previous section, the individual feels invested with power over his health and regards the doctor as a facilitator of this power. Thus, he is unable to link his health position with the socio-economic environment in which he lives. In effect, he becomes an active partner in the perpetuation of the myopia regarding health and disease.

How health is popularly understood is in large part reflected in a society’s therapeutics. In turn, these therapeutics further structure cultural understanding.\textsuperscript{119} The new health consciousness entails further medicalisation of culture, and in particular, a medicalisation of how the problem of health is understood. Medicalisation refers to the extension of the range of social phenomena mediated by the concept of health and illness, often focusing on the importance of that process for understanding the social control of deviance. As Illich notes:

\begin{quote}
By naming the spirit that underlies deviance, authority places the deviant under the control of language and custom and turns him from a threat into a support of the social system…. Aetiology is socially self-fulfilling\textsuperscript{120}
\end{quote}


\textsuperscript{119} E. Friedson (1972) \textit{Profession of Medicine}, Dodd Mead and Co., New York.

\textsuperscript{120} I. Illich (1975) \textit{Medical Nemesis: The Expropriate of Health}, Pantheon, New York.
The medical naming of that spirit increasingly circumscribes social existence. Deviant behaviour is defined in terms of sickness and normality in terms of health. Alcoholism, child abuse, substance abuse, obesity, problems with sexual functioning and violence have all become matters for medical diagnosis and the label of illness has been attached to them.¹²¹ This is ironic since the problems of ill health and disease in the third world countries is entirely of a different order, located in hunger, poverty and infection, all of which have social bases. Medicine as a therapeutic or clinical science locates the problem of disease in the individual body. The individual is both the locus of perception and intervention, more firmly so since the end of the nineteenth century when as, Foucault¹²² traces the transformation (the beginning of which he dates to the close of the eighteenth century), the very foundation of medical knowledge becomes lodged in the “sovereignty of the gaze” fixed on individual signs and symptoms and then in deep anatomical structures. It is through the observation of individual signs and symptoms that it became “possible to designate a pathological state... a morbid essence... and an immediate cause”.¹²³ In addition, with the development of pathology, the medical understanding of disease turned even more fully toward “the deep, invisible, solid, enclosed, but accessible space of the human body”.¹²⁴ Thus, what is known about disease is now a matter of positive knowledge of the

¹²³ M. Foucault (1973) op. cit., p. 90.
¹²⁴ Ibid., p. 195.
individual. What is seen is what is known, and what is known becomes the space for intervention. Locked into a particular way of seeing, an imprisonment reinforced by institutional structures, medicine knows and acts upon disease bounded by an immediacy of perception, which is physical (mechanical, biochemical, visual).

The spectre of a medicalised and medicated society, where already psycho-active drugs, sleeping aids and common pain relievers have become the standard response to almost every conceivable malaise, must at least raise questions about the wisdom of such heavy reliance upon medical problem solving. Thus, the use of psychology in the field of health awareness remains locked in a prison of reductionism. The modification of medical notions of causality is entirely unidimensional, towards psychologism, towards host resistance and adaptation. Even when the psychological environment of the ill person is taken into account in the treatment of the disease, it is merely the immediate personal environment that is considered and not the social environment. Jacoby has written much on contemporary psychology; the context is most often reduced to the immediate one of interpersonal relations and "psychological atmospheres". He notes:

A social constellation is banalized to an immediate human network. It is forgotten that the relation between "you and me" or "you and the family" is not exhausted in the immediate: all of society seeps in.\textsuperscript{125}

Nevertheless, the study of the individual reduces the social context to the

immediate context of interpersonal relations and psychological atmospheres.

Ardell observes:

The manner in which you organise your bedroom or work space, the kinds of friendship networks you create and sustain, and the nature of the feedback about yourself which you invite by your actions, are all examples of the personal environment, or spaces you consciously or unknowingly set up for yourself.¹²⁶

In the reduction of "social relations to immediate human ones", the society in which experience is lodged remains hidden; the part is isolated from the whole. Central to the self-care and awareness model is the concept of individual responsibility. This notion appears in virtually everything that has been written on these subjects. Ardell summarises its importance:

All dimensions of high-level wellness are equally important, but self-responsibility seems more equal than all the rest. It is the philosopher's stone, the mariner's compass, and the ring of power to a high-level wellness life style. Without an active sense of accountability for your own well being, you won't have the necessary motivation to lead a health enhancing lifestyle.¹²⁷

Asserting a claim to individual responsibility partially delegitimises existing authorities and throws open a new political terrain. To the extent that individual responsibility and related terms like self-help are experienced as symbols of empowerment, they may become one of the few ways that people conceive of themselves as actively political at all.¹²⁸

However, like political language, individual responsibility is highly problematic. It risks all the myopia of classical individualism. It promotes a

¹²⁷ Ibid., p. 94.
¹²⁸ A. Gartner and F. Reissman, *op. cit.*
conception, which overlooks the social constraints against “choosing”. Finally, as currently employed, the notion of individual responsibility promotes an assumption of individual blame as well. Self-care and changes in life styles are supposed to be the most important strategies to improve the life span of our individual citizens. Moreover, behaviourists, psychologists, and “mood analysers” are put to work to change the individual’s behaviour. The basic cause of sickness or ill health is located within the individual and not in the system. In addition, the solution, therefore, is intervention, primarily behaviour modification, and not the structural change of the economic and social systems and fundamental economic relationships. In this way, broad socio-economic dimensions are systematically excluded from the analysis and, instead, risk is considered largely in behavioural terms. Behaviourism, carried to an extreme, has led to unscientific and reactionary theories such as behaviour modification, which uses unethical and even brutal means to change behaviour. The result is “victim blaming”, a conception that is consistent with the rise of methodological individualism in public health.

CONCLUSION

The historical progression of public health through the ages witnessed the overriding influence of methodological individualism. The work by Descartes,
Hobbes Baron and many others marked a paradigm shift in philosophy with the necessary fallouts in natural and social sciences. Thus, while evidence of a holistic approach to health is observed in the writings of people like Hippocrates, the developments subsequent to the establishment of the Cartesian paradigm, contained strong elements of individualism. Thus, medicine or health travelled progressively through the phases of bedside, hospital and laboratory medicine, each phase displaying more individualistic, mechanistic and reductionist components than the previous one. In epidemiology, medical sociology and psychology, the three interactive disciplines of public health, there was a concomitant rise of individualism. Over time, there has been a greater adherence to quantitative and mechanical methods, nowhere more evident than in the interaction of behaviourism with health. This obfuscates the larger socio economic causes of disease and ill health, and hence the quest for solutions.

One of the most important pillars of public health is epidemiology. In fact, the systematic epidemiological studies in the nineteenth century rightly justified epidemiology's claim as the basic "science" of public health. The developments within the field of epidemiology and its gradual transition from a population based study to an individual and laboratory based study, therefore, deserves a detailed exposition.