



Hippocrates: timeless still

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In 1868, Charles Darwin, already famous for his radical theory on evolution, made a surprising admission, acknowledging the similarities between his theories and those of Hippocrates, the famous Greek physician of the fifth century BC. In reply to a letter, now unfortunately lost, sent by Dr William Ogle (Superintendent of Statistics to the Registrar-General) Darwin declares the following:

... I wish I had known of these views of Hippocrates before I had published, for they seem almost identical with mine - merely a change of terms - and an application of them to classes of facts necessarily unknown to the old philosopher. The whole case is a good illustration of how rarely anything is new. ... Hippocrates has taken the wind out of my sails, but I care very little about being forestalled. I advance the views merely as a provisional hypothesis, but with the secret expectation that sooner or later some such view will have to be admitted. ... I do not expect the reviewers will be so learned as you otherwise, no doubt, I shall be accused of wilfully stealing Pangenesis from Hippocrates, for this is the spirit some reviewers delight to show.¹

Having grown up in a family of doctors and having attended medical school only to drop out after a couple of years, Darwin may have had some knowledge of the Hippocratic writings. He however denies it in his letter, leaving us only to guess whether he had read any of the books in the Corpus.

It is not only Darwin, though, who is witness to the richness of Hippocrates' work and personality. His reputation has been such that, over the aeons, people have repeated stories of his achievements and abilities. One story describes how on his tomb in Larissa in central Greece, bees gathered to form a beehive.² Their honey had exceptional healing properties and local people used it to treat colds, wounds and weaknesses. This is only one of the

legends surrounding the life of Hippocrates, 'The Father of Medicine'.

The historical Hippocrates

Anyone attempting a biography of Hippocrates would find very little to be certain about, especially following the more recent historical biographies that follow the modern iconoclastic trend, rather than the older, often hagiographic one. Very little information has passed down to us about his life. We do not even know what he looked like, as it is almost definite that the statues purported to represent him are a fictional depiction and not a true image. Some of the stories recounted by ancient writers and historians have been investigated by modern scholars and may be true, while others are shrouded in myth. Yet, there is no doubt that he existed and was indeed the most successful physician of his time. Plato, the founder of the Academy of Athens, who often criticized the work of doctor-practitioners in Ancient Greece, calls Hippocrates: 'the famous physician of Kos' in his dialogue 'Protagoras'.

'The Great Hippocrates, the wise physician' as Aristotle calls him in his book *Politics*, was obviously an unusual man, even for the enlightened era in which he lived. Born into a family of priests-doctors, he was taught by his physician-priest father Heraclides and his grandfather Hippocrates. At that time, anyone could become a self-proclaimed physician (*ιητροός*) without having to go through any kind of structured training, provided he was born into a family of doctors. Medicine was a 'closed occupation', practised mainly by priests in the temples, the Asklepeia. Consequently, medical practice was, more often than not, mixed with magical, supernatural and superstitious elements. Hippocrates did not believe that illnesses were God-sent. Furthermore, he was not content to just preserve the traditional practice of his ancestors. He was exceptional in

physician philosopher of ancient times, but a 'modern' version who, for me, was no less inspiring. 'Galen' was the pseudonym used by Dr Spyros Marketos, a professor of the history of medicine in Athens, when he wrote for *Kathimerini*, a daily newspaper. Every Sunday, I was inspired by his words, particularly his accounts of the lives and work of great medical scientists. In 1987, while still a medical student in Northern Greece, I wrote to 'Galen' asking to meet him. Professor Marketos replied, inviting me to visit him. Travelling overnight in the sleeper of a slow train from Thessaloniki to Athens, I arrived as the sun appeared on the horizon. I stayed in a small hotel near the Acropolis and walked to his office in Kolonaki. This was to be the first of countless trips over the next few years. Professor Marketos had invited me to join his circle of young medical

that he broke the longstanding tradition of keeping the occupation within the family. He established the School of Kos³ where he taught medicine for a fee to outsiders who wanted to learn 'the Art' and were prepared to abide by the rules described in the Hippocratic Oath.

Between 440 and 360 BC (approximately) Hippocrates wrote a number of medical treatises and his pupils probably wrote many more.^{4,5} Only 60 treatises were saved from the fire that destroyed the Great Library of Alexandria around the end of the second century AD. The surviving texts were compiled, possibly by an Alexandrian librarian, and published under the title *Corpus Hippocraticum*. The authorship of the books in the Corpus continues to be the subject of archaeological and historical research and debate. Although some of the books may not be Hippocrates' own writings, it is nevertheless agreed that all display his influence.³

The need to review the evidence

In his text *Ancient Medicine* Hippocrates was critical of his predecessors for being inadequately prepared to practise medicine:

All those who have taken as their task to speak or write about medicine and are using a hypothesis for their thesis, such as hot or cold, wet or dry or anything else similar, being the cause of illness and death in human beings, clearly are wrong in what they say, as they reduce the causes of diseases to one or two factors. But their fault is especially grave, as their mistakes have to do with a real art, which people use in the most important circumstances and whose good practitioners are especially honored by all. Some of these practitioners are bad, while others are much better. Ancient Medicine 1.1⁶

However, he acknowledged that not everything was wrong and that there had been useful discoveries made before him. He therefore instructed doctors to review and analyze all pre-existing data before embarking on any research. This method of inquiry, he said, was and always had been the only acceptable way of finding answers in medicine, as it helped physicians with good training and inquisitive mind focus their attention on what had not been discovered:

...full discovery will be made, if the inquirer be competent, conduct his researches with knowledge of the discoveries already made, and make them his starting-point; but anyone who, casting aside and rejecting all these means, attempts to conduct research in any other way or after another fashion, and asserts that he has found out anything, is and has been, the victim of deception. Ancient Medicine 1.2⁶

This clear Hippocratic instruction brings to mind today's call for systematic reviews, a necessary first step to establishing what is already known and uncovering areas that need further exploration. A plethora of research studies and publications in a large number of journals means that systematic reviews are more important nowadays than ever before. Modern scientists agree that failure to review pre-existing data can have negative consequences, sometimes fatal.⁷

First and foremost, the people

In *Ancient Medicine* Hippocrates stresses that doctors' duty is to help alleviate the suffering of the people «*ἀνθρώποι*» (he does not use the word patient). He emphasizes that doctors must be able to communicate their knowledge of the causes and treatments of diseases in a way that is understandable and beneficial to people:

But it is particularly important I believe that when one discusses this art one says things in a way that can be understood by lay people. For the subject of our research and discussion should be simply and solely the sufferings and illnesses of people. It is not easy for lay men to understand how illnesses appear and pass away and what causes them to get better or worse; but when someone else has discovered these things and explains them then it is easy... But if he fails to be clear to lay people and does not succeed in making his listeners understand, then he misses what is truly important. Ancient Medicine 3, my translation⁴

Choosing the right treatment

Hippocratic doctors considered each person to be unique and therefore adapted their advice, paying particular attention to the characteristics of each person (age, gender, appearance and physique), their daily habits, the place they lived in and the

students studying the history and philosophy of medicine.

And so my journey began. Studying the books in the *Hippocratic Corpus*, I discovered that, despite the fact that

they did not have our anatomical, biochemical and physiological understanding, Hippocrates and his followers knew how to use diet to restore health in ill people.

My interest in Hippocrates led me to study for an MSc in Nutritional Medicine at the University of Surrey. I am indebted to Professor Spyros Marketos whose writing and encouragement inspired me at the beginning of my medical career

Provenance

Invited contribution from the James Lind Library

season of the year. They were helped to decide on their prescribed treatment by their past experience of treating similar cases:

...the physician sets about his task (of prescribing treatment) with healthy mind and healthy body, having considered the case and past cases of like characteristics to the present, so as to say how they were treated and cured. The Art 2.7⁶

Then, as today, physicians often had to face uncertainty in their practice when choosing the right treatment for their patients. During a historical period of very limited access to written literature, Hippocratic doctors used what we would now call grade IV evidence (that is, anecdotal, based on personal experience) to guide their clinical decisions. In the 21st century, modern doctors can rely on more robust evidence in their daily practice.⁸ Even so, they continue to be influenced by their clinical experience, not least in avoiding doing harm to patients.⁹

The art of medicine and writing

A doctor's aim, Hippocrates argues, should be to push medicine forward, taking what has already been discovered and improving it further, to advance *The Art* of medicine:

In my opinion, however, to discover what was unknown before is the ambition and task of intelligence, and so is to bring to completion what was already accomplished in part. The Art 2.1⁶

Hippocrates called for physicians to engage with research in health and disease, as today. Every new discovery opens up another level of inquiry that goes deeper into understanding how the human body functions.

An aspect of Hippocratic Medicine that was innovative at the time relates to the practice of collecting detailed records of the patients Hippocrates cared for. This practice marked a significant shift from the then traditional oral transmission of knowledge. Plato commented on this new movement of the written word, in his work *Phaedrus*:

For this [the art of writing] will cause forgetfulness in the minds of those who have learned, because they will neglect their memory. Having put their

trust in writing, they will recall to memory things from outside, by means of external marks; not from inside themselves, by themselves. You have invented a pharmakon not for memory, but for reminding.¹⁰

Perhaps these records were used for teaching purposes. We do not really know what their purpose was. Hippocrates challenged the then oral tradition, by recording his observations. When a person came to see him about their illness, he examined details about their habits, lifestyle, food intake and their symptoms and signs of disease. With his companions and disciples, he recorded his findings, analyzed them and later developed his theories. Through this system, which was based on clinical observation, he drew original conclusions and pushed medicine forward to a new era, influencing physicians more than anyone else before him.

The case histories written in some of the books, such as the *Epidemics*, are only epigrammatic recollection of certain patients. It is possible that the information presented was only a summary of the actual cases and its purpose was primarily for teaching. Yet, what these writings show is a discrimination of cases and a search for understanding of what determines disease progression and prognosis:

The most acute diseases, the most severe, difficult and fatal belong to the continuous fevers. The least fatal and least difficult of all, but the longest of all, is the quartan . . . It is necessary also to consider the person's mode of life and to take it into account when prescribing. Many other important symptoms there are which are akin to these . . . These must be duly weighed when considering and deciding who is suffering from one of these diseases in an acute, fatal form, or fatal illness, or one from which he may recover . . . Epidemics I 1.XXIV-V⁶

The woman suffering from angina who lay sick in the house of Aristion began her complaint with indistinctness of speech. Tongue red, and grew parched. First day: Shivered, and grew hot. Third day: Rigor; acute fever; a reddish, hard swelling in the neck, extending to the breast on either side; extremities cold and livid, breathing elevated; drink returned through the nostrils –she could not swallow- stools and urine ceased. Fourth day: general exacerbation. Fifth day: Death. Epidemics III, 1. Case VII⁶

Personalized medicine based on diet and lifestyle

The special interest in each person's particular characteristics distinguishes Hippocratic medicine significantly from modern medicine. Hippocrates put the person at the center of his attention, while modern medicine focuses on the disease. Hippocrates was first and foremost interested in finding out what led to the development of the symptoms experienced by the person. He distinguished lifestyle patterns and personal characteristics that predisposed to certain conditions. Although modern medicine is increasingly accepting the importance of lifestyle in the development of chronic diseases, it continues to give priority to examining the illness and treating the symptoms. Hippocratic therapies involved primarily changes in food, exercise and other lifestyle patterns while modern medical treatments concentrate on pharmacological and surgical interventions.

In *The Art*, the writer gives general advice on how a patient should be treated. He explains that medical treatment consists of much more than drugs:

The most famous doctors cure by changing the diet and lifestyle of their patient and, by using other substances. Such capable doctors have the knowledge and ability to use the therapeutic properties of most natural or man-made products. The Art 2.6⁶

The word *diet* (δίαιτα – diaita) in Ancient Greek had a much broader meaning; it meant 'mode of life' and it encompassed the various aspects of lifestyle: food and drink, physical exercises, baths and massage, sun-therapy, sleep and sexual practice, 'passions of the soul', habits and generally the whole way of leading one's life. Modern medicine's re-discovery of the importance of lifestyle in disease prevention and treatment resonates with the approach taken by Hippocrates.

Timeless observations

Although the physiologic explanations found in the Corpus differ from contemporary knowledge, many of the Hippocratic comments, aphorisms and treatments, reveal a clear understanding of disease prevention, causes and prognosis,

suggesting that the Hippocratic methods of inquiry were appropriate and on the right track. For example, in *Airs, Waters and Places* the author describes the tribe of Scythians in whom, he says, overweight and obesity was prevalent due to the fact that they were leading sedentary lives. The relationship between reduced energy expenditure and overweight is therefore correctly observed:

... Their bodies grow relaxed and squat, firstly because, unlike the Egyptians, they do not use swaddling clothes, of which they have not the habit, for the sake of their riding, that they may sit a horse well; secondly, through their sedentary lives. For the boys, until they can ride, sit the greatest part of the time in the wagon, and because of the migrations and wanderings rarely walk on foot; while the girls are wonderfully flabby and torpid in physique ... [my emphasis]. Aer. 1.20⁶

In addition, the Hippocratic author describes the causes of their infertility:

*A constitution of this kind prevents fertility. The men have no great desire for intercourse because of the moistness of their constitution and the softness and chill of their abdomen, which are the greatest checks on venery. Moreover, the constant jolting on their horses unfits them for intercourse. Such are the causes of barrenness in the men; in the women they are the **fatness and moistness of their flesh**, which are such that the womb cannot absorb the seed. For neither is their monthly purging as it should be, but scanty and late, while the mouth of the womb is closed by fat and does not admit the seed. They are personally fat and lazy, and their abdomen is cold and soft. These are the causes, which make the Scythian race infertile. A clear proof is afforded by their slave-girls. These, because of their activity and leanness of body, no sooner go to a man than they are **with child** [my emphases]. Aer. 1.21⁶*

The author observes correctly that obesity and a sedentary lifestyle have a negative impact on women's reproductive health, as has also been reported in contemporary studies.^{11–13} He attempts a physiological explanation for male fertility problems, which differs from modern understanding but which connects the act of horse riding to sexual and reproductive dysfunction in men. Current studies suggest that activities

similar to horse riding, such as cycling, can impair male fertility by increasing scrotal temperature¹⁴ and increase the risk of erectile dysfunction by perineal compression causing vascular, endothelial and neural abnormalities.¹⁵

As a final example of the timelessness of Hippocratic observations, the modern doctor can look at what is said about the relationship between body weight and longevity in the book of *Aphorisms*:

Those who are constitutionally very fat are more apt to die quickly than those who are thin. Aphorisms 2.44⁶

Numerous modern studies show reduced life expectancy as a result of overweight/obesity being the number one public health issue for most industrialized countries.¹⁶

A medical legacy

The words that the writer uses in *Ancient Medicine* to describe the medicine of older generations could be used today to describe Hippocratic Medicine itself:

we ought not to reject the ancient art as non-existent, or on the ground that its method of inquiry is faulty, just because it has not attained exactness in every detail. Having been able by reasoning to rise from deep ignorance to approximately perfect accuracy, I think we ought to admire the discoveries as the work, not of chance, but of inquiry rightly and correctly conducted. Ancient Medicine 1.12⁶

Despite today's advanced knowledge though, it seems that contemporary medicine can still turn to Hippocrates for inspiration and understanding. And the complexity of medical practice, which is accurately described in the first Hippocratic *Aphorism*, still applies to modern healthcare professionals:

Life is short, the Art long, opportunity fleeting, experience false, judgment difficult. Aphorisms 4 1.1⁶

This timeless statement and other 'unchanging truths' in the Hippocratic Corpus, written around the fourth century BC, continue to ring true today. What will remain of the medicine we practice today in 25 centuries, we wonder?

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