


Apr 28th, 12:45 PM - 2:15 PM

What's Your Temperament: the Humoral Theory's Influence on Medicine in Ancient Greece

Riley Sebers
Clackamas High School

Let us know how access to this document benefits you.

Follow this and additional works at: <http://pdxscholar.library.pdx.edu/younghistorians>

 Part of the [Ancient History, Greek and Roman through Late Antiquity Commons](#), [European History Commons](#), and the [History of Science, Technology, and Medicine Commons](#)

Riley Sebers, "What's Your Temperament: the Humoral Theory's Influence on Medicine in Ancient Greece" (April 28, 2016). *Young Historians Conference*. Paper 12.

<http://pdxscholar.library.pdx.edu/younghistorians/2016/oralpres/12>

This Event is brought to you for free and open access. It has been accepted for inclusion in Young Historians Conference by an authorized administrator of PDXScholar. For more information, please contact pdxscholar@pdx.edu.

What's Your Temperament: the Humoral Theory's Influence on Medicine in Ancient Greece

Riley Sebers

Humanities: Western Civilization

Mrs. Balzer

10 March, 2016

What's Your Temperament: the Humoral Theory's Influence on Medicine in Ancient Greece

When an individual is sick with a persistent fever, cough, or even a small cold, the popular reaction is to go to the doctor. Now imagine instead of receiving a prescription or a suggestion for fluids, the sick individual receives an incision in his arm and a bowl by his feet to catch the blood. Although this method of treatment would be seen as ludicrous to current doctors, Hippocratic physicians used bloodletting as a panacea. Bloodletting is the act of purposefully making a sick individual bleed for medical reasons. In ancient Greece, bloodletting was a common practice to remove a pathological humor from a patient's body to restore the balance of their humors and alleviate the illness afflicting the patient (Bockler 107). This practice is based on the humoral theory which guided medical procedures in ancient Greece. The humoral theory provided a basis for understanding the human body and overpowered religious customs as the predominant influence on medical practices in ancient Greece.

The humoral theory asserts that the human body consists of four humors which represent the cardinal fluids. The cardinal fluids are blood, yellow bile, black bile, and phlegm. Each humor is associated with a different organ and season. Black bile is associated with the spleen and autumn, yellow bile with the liver and summer, phlegm with the brain and winter, and blood with the heart and spring. In addition, every human possesses two primary opposite qualities: hot, dry, moist, or cold. An individual's temperament can be distinguished by which humor he possesses. These fluids are meant to have a natural balance unique to each person, which maintains the health of a human. If this specific balance is disturbed, illness occurs as a result. Hippocratic physicians believed these balances could be restored by removing or adding humors in a number of different ways (Cartledge 314; Bockler 106). This particular theory dates to

before Greek times, but Hippocrates reworked it into what is now known as the Hippocratic humoral theory. Hippocrates of Cos, a physician who lived between 460-380 BCE, is credited as author of the *Hippocratic Corpus* and the Hippocratic Oath (L. Adkins and R. Adkins 399).

In ancient Greece, physicians used the humoral theory to cure illness on a regular basis. The theory was used as a type of guide for what was wrong with a sick individual and what the best kind of treatment for that person would be. The process of diagnosing an ailment “consists in finding out which of the humores have run out of their range of equilibrium and in diminishing or increasing their quantities, qualities, or mixture so that equilibrium is restored” (Balzer and Eleftheriadis 208). There is a multitude of potential causes for a shift in the humors and consequently the physician would need to take every aspect of the patient into consideration. Bockler describes the physician's method of diagnosis in his piece “Let’s Play Doctor: Medical Rounds in Ancient Greece”:

The physician used his five senses to study all of the patient’s secretions and excretions to determine the balance of the humors. The prognosis of a disease from the signs and symptoms aided the proper treatment to restore the humoral balance... Prognosis of disease was made using information about the environment and individual symptoms of the patient.

(Bockler 107)

There were multiple ways to rebalance a patient’s humoral equilibrium. Emetics, agents that induce vomiting, were used in the same way as bloodletting, to release unwanted humors. Changes in diet, hygiene, and allowing the humors to fix themselves were the less intrusive

treatment options (Bockler 107). Every aspect of patient care from evaluation to diagnosis to treatment was built around the humoral theory.

Some scholars believe that there were different factors influencing Ancient Greek medicine aside from the humoral theory, specifically religion. Scholars such as Richard Feen, the author of “The Moral Basis of Graeco-Roman Medical Practices”, have identified connections between the exclusivity of the Hippocratic teachings and certain religious cults of that time. Feen writes, “...for we see in the Hippocratic oath various elements of a religious, if not ‘cultish’ nature and origin... the possibility exists that the mysteries and the various cults brought to their medical followers an ethical code or set of moral obligations, and the Hippocratic oath was a product of such activity” (Feen 45). Summarily, Feen is exploiting the similarities between certain cults and the Hippocratic Oath itself, one of the most influential pieces of Hippocratic writing. He is pointing to the conclusion that the Hippocratic Oath is a product of the ethical codes set by cults. It would be naive to make the assumption that religion had absolutely no influence on medical practices during Ancient Greek times. Polytheistic beliefs were strong throughout Greece and would continue to be influential until Christianity arose during Roman times.

However, the majority of Feen’s argument is based on the parallelism of the exclusivity of the Hippocratic Oath and of the exclusivity cult religions practiced. Although the Hippocratic Oath did present itself as an exclusive oath, there are many inconsistencies within it. The authors of *Ancient Greece: A Political, Social, and Cultural History* highlight a few of these inconsistencies:

In the [Hippocratic] oath the physicians promise to respect the physicians who taught them and to hand on their knowledge only to their teachers' sons and paying apprentices. They swear to abstain from using their craft to harm or wrong any person and to refrain from practicing abortion and euthanasia... the oath was by no means universally adhered to by Greek physicians, as is obvious from other medical texts that do discuss abortion, and from the use of vivisection. (Pomeroy et al 461-462)

There are disparities in the Hippocratic writings and the actual practices of these physicians. These discrepancies cause speculation on how closely other pieces of the Hippocratic Oath were followed. This brings Feen's theory into question under the circumstance that it is possible the exclusivity wasn't practiced by all Hippocratic physicians, just as avoiding abortion wasn't. This conclusion would mean there was less emphasis on actually following the exclusivity of the oath which consequently discredits the similarities between the oath's and certain religious cults' exclusivity.

There is a vast amount of written evidence of situations where the humoral theory is used to diagnose ailments. In one piece of the *Hippocratic Corpus*, "On the Sacred Disease", the author explains the cause of epilepsy. As mentioned earlier, he believed it was due to excess phlegm in the brain. The author goes on to describe how this might happen:

But the brain is the cause of this affliction... veins run toward it from all parts of the body, many of which are small, but two are thick, the one from the liver, and the other from the spleen. And it is thus with regard to the one from the liver: a portion of... it divides; its thickest, largest, and most hollow part ends in the

brain... a vein from the spleen is distributed on the left side, upward and downward, like that from the liver, but more slender and feeble. The man becomes speechless when the phlegm, suddenly descending into the veins, shuts out the air, and does not admit it either to the brain or to the vena cava, or to the ventricles, but interrupts the inspiration. (“On the Sacred Disease”)

There are only four major organs mentioned in this explanation: the heart, brain, spleen, and liver. These happen to also be the four organs associated with the humoral theory. The author is not only referencing the humoral theory by mentioning these body parts, but is also applying it to his own ideas. The author also mentions hollow veins that attach to each of these organs believing that these veins are what the phlegm passes through. If these veins are obstructed then the illness occurs. The belief that veins are hollow and contained the humors, air, and foodstuff were a critical concept in the humoral theory (Bockler 106).

The Cult of Asclepius was one specific religious cult that had ties to medicine. Asclepius was the Greek god of medicine. Many of the researchers who believe that religion ruled medicine in Ancient Greece referenced this cult specifically. Compton, a doctor, wrote about the Cult of Asclepius:

The ill came from all around to be cured in the various Asklepieia... Health and religion / spirituality / devotion were inseparable and unified in Asklepieion medicine... The antagonism of science and religion evident to the modern mind was foreign to ancient thought. A period of recuperation in the Asklepieion was marked by spiritual contemplation and devotion to the benevolent god of healing. Diseases were commonly regarded as the effects of the

anger of heaven, and the restoration of the sick was felt to be dependent on the ceremonies and religious customs which pleased and obeyed the gods. (Compton 303, 307)

In short, Compton is claiming that science and religion had no separation whatsoever. He goes as far as to say that the idea of a separation was “foreign to ancient thought” (Compton 307). This implies that religion had to be the leading influence on medicine in ancient Greece. He goes on to describe the common reasoning for sickness to occur as the angering of the gods and pleasing the gods cured the sickness brought on by them. The fallacy in this argument lies with the fact that once the Hippocratic physicians appeared, they denied the idea of religious influence on illness.

The humoral theory was the cornerstone of the thought that illness itself is a result of natural causes as opposed to the work of the supernatural. Therefore, Hippocratic physicians did reject theories of religious causes such as the idea of illness rooted in punishment from angry gods. This contradicts Compton’s argument that religion and science couldn’t be separated in ancient Greek. In *The Cambridge Illustrated History of Ancient Greece*, Cartledge summarizes medical practices before Hippocrates’ time:

Healing before the fifth century, though, was hardly a science. The measures which were thought to work were just as likely to involve incantations and magical amulets... there was no interest in investigating the nature of the human body, disease itself, or why the measures worked.
(Cartledge 312)

In other words, religious practices were the main source of attempts to heal the ill before the emergence of the ideas introduced by Hippocrates. Prior to Hippocrates' conquest into fact-based practices, healers were stuck in a stagnant frame of mind as opposed to asking new questions about illness and trying to understand it. Hippocratic physicians "claimed [the humoral theory] to be empirically justified, and it came to dominate medicine for the next 2,000 years" (L. Adkins and R. Adkins 393).

Once Hippocrates adopted and remastered the humoral theory, medical practices shifted in the direction of believing in what can be proven. Overall, this resulted in the massive shift from blame of otherworldly causes such as the gods and goddesses to natural causes. The humoral theory's idea of natural causes was so influential that Hippocratic physicians directly criticized those who didn't believe in natural causes. In Lloyd's piece, he comments on the author- a Hippocratic physician- of "On the Sacred Disease". Lloyd asserts, "The author's criticisms of his opponents can be divided into three main kinds: he accuses them (1) of inconsistency, (2) of impiety and (3) of dishonesty" (Lloyd 4). This ancient author was so highly invested in the belief that disease is a result of natural causes that he felt it was necessary to publicly discredit those who believed differently. Anyone who thinks differently than this was not only branded as wrong, but also as a liar. The author of "On the Sacred Disease", asserts that "[those who] enjoin with reference to its divinity, as if possessed of more knowledge, and announcing beforehand other causes so that if the person should recover, theirs would be the honor and credit; and if he should die, they would have a certain defense, as if the gods, and not they, were to blame." The passionate belief in the accuracy of these newfound and transformative ideas pushed physicians such as the author of this piece to have the confidence to

speak out against old ideas and present their new ones with confidence. It was very important to the author of "On the Sacred Disease" that his point was made clear. That point being that no illness is more sacred than another, discrediting the special sacredness of the disease.

Furthermore, the author was denouncing any ideas of a disease that could have a sacred cause.

The humoral theory opened the door to empirical data. As is previously mentioned, it wasn't until the mid-fifth century BCE that Hippocrates and other physicians began to use empirical data to support their theories (Cartledge 312-313). Hippocrates and his students then made it a point to prove through facts and experiences that disease was a result of an imbalance of humors. Therefore, other Hippocratic physicians moved away from the irrational and increasingly relied on empirical data for theory and practices. To prove hypotheses, experiments were constantly conducted. One unknown individual tested an experiment where he or she would "leave a jar of water out overnight to freeze, let it melt the next day and... find that some of the water has been lost... the author used it to support his theory that snow was harmful to humans to drink because the finest parts of the water were separated off by freezing leaving only the heavy 'muddy' parts behind" (Cartledge 313). The anonymous experimenter relied on these results, correct or not, to prove the theory that snow is dangerous to ingest. Along with influencing the use of empirical data, the Humoral theory also influenced the educated guesses behind hypotheses on what causes particular illnesses. One Hippocratic author wrote, in an attempt to prove a hypothesis, that if a person were to cut open a goat's head it would be moist and soggy due to excess phlegm (Lloyd 7). Goats were considered to have behaviors closely associated with those that afflicted epileptic patients. Therefore, the state of goat's brain proves the theory of the author through empirical data that epilepsy is caused by excess phlegm in the

brain. This assumption of an overly abundant amount of one of the humors- phlegm in this case- is based on the humoral theory in that an unbalance of the humors causes illness.

Humoral theory is still relevant today. Elements of the humoral theory have been re-invented into the Spanish-American humoral system. The system is based on bodily temperature equilibrium (Foster 120-121). The hot-cold theory and the principle of opposites are used to cure illness just as they were in ancient Greece. Scientists are also looking back on the reports made by Hippocrates. For example, Hippocrates was the first to link emotions to asthma and as a result of the automatic assumptions that these ideas are outdated, they are ignored. Despite this assumption, studies have recently been conducted to test Hippocrates' theory of stress causing asthma. The results of these tests show that stress and anxiety may actually be risk factors for new-onset asthma (Brooks, Douwes, and Pearce 561-562). This proves that Hippocratic theories, including the humoral theory, shouldn't be so easily dismissed. Discoveries such as these lead to the question of what other theories throughout history, not just from ancient Greece, have been overlooked and provide accurate information on medical subjects? Although treatments such as bloodletting should no longer be practiced, humans advance forward by building upon prior knowledge. The Hippocratic humoral theory presented by Hippocrates is a crucial part of the history of medicine and continues to be learned from.

Works Consulted

- Adams, Frances, trans. "On the Sacred Disease." *Hippocratic Corpus*. N.p. N.d. Web. 1 Dec. 2015.
- Adkins, Lesley, and Roy Adkins. *Handbook to Life in Ancient Greece*. New York. Facts On File. 1997. 393-399. Print.
- Balzer, W., and A. Eleftheriadis. "A Reconstruction of the Hippocratic Humoral Theory of Health." *Journal for General Philosophy of Science / Zeitschrift für allgemeine Wissenschaftstheorie*. 22.2. 1991. 207–227. *JSTOR*. Web. 15 Nov. 2015.
- Bockler, Donald. "Let's Play Doctor: Medical Rounds in Ancient Greece." *The American Biology Teacher*. 60.2. 1998. 106–111. *JSTOR*. Web. 15 Nov. 2015.
- Brooks, Collin, Jeroen Douwes, and Neil Pearce. "Stress and Asthma: Hippocrates Revisited." *Journal of Epidemiology and Community Health*. 1979-. 64.7. 2010. 561–562. Web. 15 Nov. 2015.
- Cartledge, Paul. *The Cambridge Illustrated History of Ancient Greece*. Cambridge. Cambridge University Press. 1998. 312-314. Print.
- Compton, Michael T.. "The Union of Religion and Health in Ancient Asklepieia." *Journal of Religion and Health*. 37.4. 1998. 303, 307. *JSTOR*. Web. 24 Feb. 2016.
- Feen, Richard Harrow. "The Moral Basis of Graeco-roman Medical Practice." *Journal of Religion and Health*. 22.1. 1983. 39–48. *JSTOR*. Web. 13 Nov. 2015.
- Foster, George M.. "The Validating Role of Humoral Theory in Traditional Spanish-American Therapeutics." *American Ethnologist*. 15.1. 1988. 120–135. *JSTOR*. Web. 15 Nov. 2015.

Grube, G. M. A.. "Greek Medicine and the Greek Genius." *Phoenix*. 8.4. 1954. 123–135. *JSTOR*.

Web. 13 Nov. 2015.

Lloyd, G.E.R.. "ASPECTS OF THE INTERRELATIONS OF MEDICINE, MAGIC AND PHILOSOPHY IN ANCIENT GREECE." *Apeiron: A Journal for Ancient Philosophy and Science*. 9.1. 1975. 1–16. *JSTOR*. Web. 13 Nov. 2015.

Pomeroy, Sarah B., et al. *Ancient Greece: A Political, Social, and Cultural History*. New York. Oxford University Press. 1999. 461-462. Print.

Temkin, Owsei. "Greek Medicine as Science and Craft." *Isis*. 44.3. 1953. 213–225. *JSTOR*.

Web. 13 Nov. 2015.