



Steve Server // “When you get stressed, all the blood comes out,” she explained.

This was one of the explanations I heard from a patient in the OBGYN clinic regarding her ongoing vaginal bleeding, which was likely due to cervical cancer. She told me that she had been eating flour mixed with water on days when the bleeding was particularly bad. Eating flour mixed with water would absorb the blood and prevent it from coming out. If you were to overdo it with the flour, however, then you might get sick, but just the right amount means no blood. It was the stress she was under. When the stress ceased, so too would the blood.

Patients take various and sundry supplements—some of which do some good, some of which do nothing, and some of which do actual damage. I have heard that cider vinegar is very helpful for controlling rectal bleeding, that meditation alone can cause pancreatic cancer to regress, that the MMR vaccine is a boon (“and how terrible those anti-vaxxers are!”), but, no, I don’t want the flu shot because it causes the flu.

It is always jolting to hear humoralistic explanations in a twenty-first century exam room. How foreign the mechanisms sound. How crude, relative to the slick biochemical explanations that are the stuff of biomedicine.

Though it may often seem the stuff of myth, humoralism was the dominant medical paradigm until fairly recently in human history. Though some posit its origins in Egypt or Mesopotamia, humoralism became systematized by the fifth century BC Greek physician Hippocrates. Put simply, humoralism posited that health and illness were the external manifestations of a delicate balancing act between the four cardinal bodily fluids (blood, phlegm, black bile, and yellow bile). The following excerpt from *On the Nature of Man*, a Hippocratic text, exemplifies this ideology:

*Health is primarily that state in which these constituent substances are in the correct proportion to each other, both in strength and quantity, and are well mixed. Pain occurs when one of the substances presents either a deficiency or an excess, or is separated in the body and not mixed with others* (Webb, 262).

For the Greeks, and for centuries of physicians that followed, health depended fundamentally on harmonious equilibrium between tempestuous forces of nature. Then, sometime in the early modern period, holistic, humoral approaches receded in the wake of anatomico-clinical understandings of pathology, a trend referred to by sociologist Nicolas Jewson as the “disappearance of the sick man from medical cosmology.” As clinicians were able to see pathology in the anatomy or pathology lab, less of their epistemological orientation became grounded around the bedside encounter. With the shift in methods came a shift in perspectives: from holistic to microscopic; from the social and ecological to metabolic and cellular (Jewson).

Likely you have heard the story of humoralism before. Likely it was presented with condescension, an air of superiority that only comes with privilege of not having others present to defend themselves. “Bloodletting! How foolish they were! They actually believed in such superstition!” How right and good that we should be free of that nonsense.

Clearly, the boosters of biomedicine neglect the fact that humoralism never really died. It has trickled down to today through the tissues of family tradition; it remains a part of our cultural DNA, and insists upon its presence anytime anyone says, “Better wear a warmer coat or you’ll catch a cold!”

I don’t think that patients—whether in 400BC or in 2018—are foolish or governed by superstition for suggesting that critical imbalances lead to ill health. After all, from an empirical perspective, it is not irrational for a non-scientific mind to think that applying purgatives to someone feeling ill might make them feel better. This belief is based in personal experience. Recall the last time you vomited after a bout of food poisoning, or when you were able to clear your lungs of mucus after a bad chest cold. Was it attended with a sense of relief? Wasn’t it cathartic? If people expel these substances, then feel better, it stands to reason that these substances may have been in excess, that they were the reason for the illness in the first place. Perhaps next time, we should coax the body along to hasten the elimination of that pathogenic substance.

Far from superstition, this is empiricism par excellence.

Consequently, the disdain with which we moderns treat humoralism seems to me uncalled-for. In fact, despite modern science's veneration of rigorous empiricism and the scientific method, we moderns frequently reject our own sensory perceptions to support our favored theories. I have never seen HPV with my own eyes. I see only positive viral assays on a computer screen. I haven't seen genetic change happen in a cell infected with HPV, but I've been taught it occurs and have seen cervical cancer. I have faith in our capacity to make knowledge which transcends my personal observational capacity—that though I cannot see red blood cells or virions, they exist.

At the same time, I reject Santa Claus because I have never seen him myself, even though I've seen presents under a tree and half-eaten cookies on the mantle.

Philosopher of science Paul Feyerabend, in *Against Method*, turned this observation about modern science into a larger epistemological critique. His contention is that, rather than being a structured, empirical enterprise, the scientific method often demands that we reject what we see/experience with our own eyes in the service of a prevailing belief-system. Using Galileo's advocacy of a heliocentric model as a case study, he makes persuasive points: What do you see at dawn? Do you *really* see the earth moving? Or do you conclude, based upon your preferred theory, that the earth is moving, and then use Galilean relativity to explain away that fact that you saw the sun move? Doesn't it make much more sense *in our personal experience* to argue that we are on a stable piece of rock while celestial bodies float ethereally around us?

Who do you believe? Galileo's theories? Or your own eyes?

Before everyone becomes a flat-earther, I want to clearly state that I am not trying to get people to jettison modern science. There are good reasons that we have junked humoralism, chief among them the fact that, on the mean, people today live much longer and much healthier lives than the ancients did.

Rather, my larger point is that we moderns shouldn't be so smug about the epistemological cleanliness of our enterprise. A dose of humility is order. Every scientific system has certain *a priori* assumptions that demand that we put aside what we see and simply have faith in the rightness of our beliefs..

I have faith in my system. I will reserve bloodletting only for patients with hereditary hemochromatosis and will recommend Pap smears and colposcopies, hysterectomies and chemotherapy to women with cervical cancer, and HPV vaccines to any young person I treat.

But I am not blind to my system's shortcomings. Biomedicine, with its affinity for cellular and biochemical explanations of pathophysiology, often neglects the wholeness of a patient's experience.

Hippocrates knew that much, at least. Health is indeed a delicate balance of forces: one need only be nudged in one direction or another, and the carefully coordinated system falls apart.

Any day I am confronted with humoralism in clinic, I take a seat next to my patient and simply ask them to tell me more. Biomedicine can wait a few minutes.

Image: Facsimile of bust of Hippocrates in the British Museum, Wellcome Collection, CC BY  
<https://wellcomecollection.org/works/yeyvuug4>

#### Works Cited

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