

Making Health Care Affordable

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Published: November 14, 2012

Saving American Health and Healthcare: A view from the margins.

If Wendell Berry is right then we ought not to be looking to our temples of healing and learning for solutions to our health care problems. Real solutions require seeing the problems differently and that is hard for the experts. In the following we propose a new way of seeing, which should better our own health as well as help the system that delivers it.

Much has been written about the problems associated with the analytical way of looking at the body. While there is little to counter the tremendous strides we have made in our understanding of how the body works using analytical methods, neither is there any argument to counter the fact that such an approach is essentially wrong-headed: the body, along with other living organisms, is adaptable; its adaptations are often novel, and they are always outside the range of analysis.

In systems terminology mechanical systems are linear; an effect comes from an easily determined prior cause. When we look at the body in this way we dissect out the reactions or processes we are interested in and find ways to modify them. That is what we have done since we started thinking, so analytical thinking has a long track record. But we are finding that lots of unintended consequences follow this method of thinking. The connections in living organisms are not linear, but networked with multiple interactions. In dissecting out what is of interest to us all of the unimportant connections are cut, lost, and forgotten. This was the mistake behind Vioxx® and Avandia®: they worked very well to curtail inflammation and glucose levels, which was their analytical task, but they also had the unintended consequence of causing more heart disease.

The first step then is to see the body as an adaptive organism. Living agents adapt by natural selection to their environments and those environments are different. In humans, the process is enhanced because more avenues for adapting are open to us. Some of them are cognitive; most are not. Human adaptation has received the most attention by researchers of all stripes, so we know it depends first and foremost on the individual's perception of the environment after the sensory input has traversed the fear-encrusted midbrain—which compounds the complexity.

In the medical world we have attempted to escape from the morass this complexity brings by relying on the gold standard of randomized-double-blind-placebo-controlled-trials to prove that a drug has the desired effect. The results of these studies, however, are statistical; they can be, and often are, skewed in the interest of the researcher or the pharmaceutical company funding the research. This is Marcia Angell's argument in her book, *The Truth About the Drug Companies: How They Deceive Us and What to Do About It*, and she carries it well. On the other hand what these studies uniformly and unequivocally show, which has not been openly stated, is the power of the placebo.

Placebos, theoretically inert non-drug substances, work best when they have some kind of track record, like the effects of laetrile on cancer a few decades ago, or when the doctor does a good job of selling them by talking up the good symptoms they produce. And what the patient is doing is adapting to that encouraging environment. The effectiveness of placebos demonstrates, better than anything else, how we can use our adaptability to good purpose. Far from proscribing the use of placebos the FDA ought to first and foremost make sure of the safety

of a new drug (by determining, not just their side effects, but their effect on longevity) and leave their efficacy to be determined by the marketplace. Such an alignment would make new drugs far less expensive and shift the interest to materials known to be safe with possible drug effects.

Nathan Sharon, for example, was one of the early researchers looking at how bacteria hold on to their human hosts. He found that the bacteria that cause most urinary tract infections hold on to mannose molecules that are prevalent on the surfaces of our urogenital tract surfaces. He spent the rest of his life trying to get the medical world to realize that adding mannose to the bacterial environment would cause the bacteria to hold on to it rather than us. But mannose is a natural sugar, like glucose, that can't be patented to make money for the pharmaceutical company. Same story with xylitol and tooth decay. And there is a critical part of this that has not been put together. Paul Ewald, about whom we will talk more later, argues that bacteria adapt in friendlier ways when they are stopped from getting around. While he concentrates on things like soap and water, clean water, and condoms to do this sugars that compete with bacterial binding put the same pressures on the bacteria. Sharon likened the sugars to sending a message to the bacteria: shape up or ship out is the message. Understanding this can help end our warfare with bacteria.

The first needed shift then is to recognize and honor our interconnections. We are not linear or even complicated machines and to treat us as such is a disservice.

A second shift is needed in how we look at our symptoms. When we go to the doctor with a list of symptoms we expect him or her to give us something to deal with them. This expectation and the treatment that follows is actually a remnant of the humoral system upon which western medicine is founded. Symptoms, in this way of thinking, indicate an imbalance in the body and treatment is designed to correct the imbalance. So if a person has nausea, vomiting and diarrhea they are given drugs to counter those symptoms. If a person has a runny nose they are given antihistamines and or decongestants to counter it. The effort is to balance the symptoms and return the body to its more normal state.

There is another way of looking at symptoms, which shows this humoral view to be just as wrong-headed as the analytical method of dealing with a complex and adaptive organism. Biologists are asking: Why are particular symptoms expressed in us? Their conclusions, outlined concisely by George Williams and Randolph Nesse in their book, *Why We Get Sick*, show that there is generally a survival benefit associated with symptoms. In our ongoing play with the infectious agents in our environment some symptoms help us to better survive – they are termed defenses – some help the infecting agents to survive – they are called manipulations – and some are just side effects; and before treating a symptom we need to know which category we are coping with. Williams and Nesse argue that medicine ought to be asking these questions, but that view hasn't made much headway in mainstream medicine.

When we ask this question, for example, of the nausea, vomiting, and diarrhea in the above example we see that the symptoms are there likely because we have something in our gut that our body doesn't like—it's a defense. The World Health Organization cautions against using anti-diarrheal medication in acute cases of gastroenteritis because the defense gives the person a survival benefit and turning it off with drugs, just like hobbling the defense of your favorite football team, means you are more likely to lose the game.

Using drugs to slow bowel emptying means that the foreign toxin, bacteria, virus, or what ever triggered the symptoms, will be around longer in the GI tract. Their use has been found, understandably, to increase the incidence of inflammatory bowel disease. The advice of the World Health Organization suggests also that some harm may follow the use of anti-diarrheal medications in acute diarrhea, but no one is asking if there is a

connection between the drugs and those who have died from toxigenic *E. coli* enteritis.

The situation is similar with the runny nose. Antihistamines and decongestants were the wonder drugs of the 1940's. They sanitized our children's runny noses. But sixty some years later they were removed from the market for children because some children had died from their use. While the FDA and pharmaceutical industry explain those deaths as resulting from parental overdosing, the runny nose is just as much a defense, in cleaning out the nose, as is the diarrhea in cleaning the gut—and when you hobble the defense you more often lose.

Many lives and many dollars would be saved if we would ask these questions before we jump to treat bothersome symptoms. Asking the question honors the adaptations our ancestors have made and we have inherited, which have enhanced the defenses and made us better able to defend ourselves from the noxious elements in our environments. It is not that our system is unbalanced and unhealthy when it expresses these symptoms, but that it shifts to a better position to deal with the challenges—it calls in the defensive team.

When a symptom is determined to be a manipulation, we should try to stop it, but not in the way of countering the symptom itself. Classic examples of manipulations are the fever that accompanies malaria, which makes the febrile person weak and a good target for hungry mosquitoes that then spread the disease, and the excessive diarrhea that is the hallmark of cholera. These symptoms help the disease-causing agent to better survive by getting to another person. Our traditional treatment of such infectious disease is to kill the agent, but these agents too are adaptive and when we threaten them they only seem to adapt more quickly as they develop resistance to our antibiotics. Paul Ewald in his book, *The Evolution of Infectious Disease*, suggests an alternative that is more consistent with how bacteria adapt.

Ewald argues that addressing the transmission of the bacteria that is helped by the manipulative symptom is the best way to block them. Mosquito nets protect against hungry mosquitoes, screening homes stopped the malaria in the U.S. that followed the dams built in the south by the TVA, proper sewage disposal stops cholera, and condoms stop most sexually transmitted diseases. Ewald even shows that when such measures are put in place the bacteria adapt toward decreased virulence—they become tamer.

This is a model that acknowledges human beings (and bacteria as well) as living adaptable organisms rather than seeing them as complex machines that can be taken apart, analyzed, and repaired. Defenses that help us survive need to be honored and supported. Manipulations need to be addressed and frustrated. All living things adapt; it is a characteristic of life. Mechanical systems can't adapt beyond our ability to program them. When medicine shifts from the mechanical and technological to a biological model it will be kinder, more effective, and less expensive, because it will see us as the living, adapting agents that we in fact are. It's time to bury the humoral system of medicine for good and this is the way to do it.

A version of this article is also at <http://www.opednews.com/articles/Saving-American-Health-and-by-Lon-Jones-121114-676.html>