

## Toward a New Epistemology Through an Accessible Language

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"There are known knowns. There are things we know that we know. There are known unknowns. That is to say, there are things that we know we don't know. But there are also unknown unknowns. There are things we don't know we don't know."

Is this verbal sleight-of-hand the way some of us might regard research - as irrelevant or even something to be distrusted? Actually, this verbal gem is the direct quotation of the U.S. Secretary of Defense, Donald Rumsfeld, when asked to comment upon the progress of the war on terror.<sup>1</sup>

The opacity of this statement notwithstanding, it does demonstrate how words can conceal as well as communicate effectively - and this now becomes the challenge to researchers in all fields, extending well beyond chiropractic alone.

The gold standard of research efforts is to communicate succinctly and unambiguously in a manner meant to stimulate further thought and inquiry. In a perfect world, this is sort of like creating a progressive canvas in which all qualified and interested contributors would be expected to add an important dimension or detail over time. In terms of health care, this would mean an incremental, steady and continual improvement with greater efficiency and less cost overall, and the absence of debilitating turf battles.

In an imperfect world, of course, we have seen the opposite - and this also extends well beyond chiropractic. Medical history is rife with examples demonstrating how our ability to adapt is sometimes measured in geological time:

1. Edward Jenner, who in 1797 developed the concept of the smallpox vaccine, for which the Royal Society of Medicine reprimanded him for risking his reputation on something "so much at variance with established knowledge, and withal so incredible."<sup>2</sup>
2. Ignaz Semmelweis, who in 1850 discovered that physicians' unwashed hands caused infections among new mothers at the University of Vienna. When he pointed this out, he lost his position there and died in disgrace.<sup>2</sup>
3. Oliver Wendell Holmes, who after publishing an article on the prevention of childhood fever through hand washing, brought on bitter abuse.<sup>2</sup>
4. Kilmer McCully, who as a wonder boy pathologist from Harvard in the late 1960s, proposed the role of folate deficiency and homocysteine in cardiovascular disease and was banished to continue his work at a Veterans Administration hospital in Rhode Island.<sup>2</sup>
5. Barry Marshall, who tried to overcome the prevailing thought that peptic ulcers were caused by dominant mothers and passive fathers<sup>3</sup> by ingesting cultures of *Helicobacter pylori*, and then developed gastritis. Marshall underwent an endoscopy and biopsy, with the pathogen being re-isolated, thereby completing Koch's postulates. However, it was only when Marshall's discovery was published in the National Enquire (that august peer-reviewed journal, otherwise known as a tabloid) that his findings came to popular attention.<sup>2</sup>

But knowledge can be transmitted and received effectively, which is where our efforts at FCER

come into play. I was fortunate enough to live up to this ideal recently by making use of my recent findings and those of several others<sup>4</sup> to the effect that elevations of the amino acid homocysteine cause the disruption of the collagen and elastin matrix of the arterial wall, and thus could be a major factor in producing a major portion of the arterial dissections believed to be attributable to spinal manipulation.<sup>5-10</sup> Specifically, I jumped all over a recent article that appeared in the journal *Stroke* over the summer which described a high-resolution echo-tracking system for demonstrating that carotid arteries in patients experiencing cervical artery dissections display abnormal elastic properties.<sup>11</sup> I suspected that the authors would enjoy hearing about homocysteine, and I was dead right. This led to my being able to present my data in person in November 2004 before a group of neurologists and research personnel at the Hopital Europeen Georges Pompidou - a major teaching hospital in Paris that opened in 2002. By speaking in neutral terms and sharing data which showed that idiopathic cervical artery dissections appeared to occur at rates approximately 10 times those attributable to spinal manipulation<sup>4</sup> and proposing mechanisms of arterial wall disaggregation involving homocysteine, I received a fantastic reception. Thirty-five minutes of presentation followed by another 30 minutes of discussion, with all manner of experiments proposed to be undertaken by staff members present in the months ahead.

But this was just the tip of the iceberg. Turns out that my host in Paris, Stephane Laurent, is deeply interested in alternative medical approaches and has previously published studies which demonstrate that real acupuncture is associated with an objective vasodilation of the radial artery in patients who are regularly exposed to acupuncture, perhaps by decreasing smooth muscle tone at the artery site. Interestingly enough, this effect is only observed in patients previously exposed to acupuncture and not in individuals experiencing this for the first time.<sup>12</sup> Dr. Laurent points out that while such French government funding sources as the CNRS and INSERM currently take a dim (okay, opaque) view upon funding research in areas of alternative medicine, private sources have been able to enable some of this research to continue.

Obviously, there are lessons to be learned here as we attempt to broaden the support of chiropractic research both in the United States and worldwide. From this experience, I am heartened to see that the goals being pursued by this French group and the chiropractic research community are far more similar than one would have first imagined without closer review.

It may get better yet. I was informed that my discussion might have opened the door for fruitful discussions and collaborations between this hospital group and chiropractic researchers in Paris. Without a doubt, I will be monitoring this situation closely, and participating as both a collaborator and administrator should a fundable project come to pass. Obviously, when groups can sit down and communicate in this manner and see a large common interest, our task becomes so much easier. If this were the rule, rather than the exception, research, guideline development, and best practice procedures would all progress at rates many times more rapidly. Obviously, this is the course we both need and wish to follow in FCER and in many chiropractic research groups and conferences around the world - whether ICSM, WFC, ACC, or RAC. Our objective here is to cultivate and emulate as many of these positive research experiences as possible, so that we many hope to describe the world around us according to Hoyle, instead of Garp.

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