Dynamic Chiropractic

CHIROPRACTIC (GENERAL)

Occam's Razor and Subluxation: A Close Shave

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The popular expression KISS ("Keep it simple, stupid") finds an interesting corollary when it comes to theory-making in selecting the best explanation for a scientific phenomenon. Here we go back some 700 years to the English logician and Franciscan friar William of Ockham, who pointed out that the explanation of any phenomenon should make as few assumptions along the way as possible and eliminate any that do not affect the observable predictions of the explanatory theory or hypothesis.

This tenet, originally attributed to the reductionist philosophy of nominalism, became known as Occam's razor. In Latin, it was expressed as follows: *Entia non sunt multiplicanda prater necessitatem*. This translates to: *Entities should not be multiplied beyond necessity*.

The above is not the same as saying things should be simplified as much as possible. Sometimes an explanation may be more complicated but in the end requires fewer assumptions; and that is the road which should be taken.

How, then, would this all apply to chiropractic? Simply through our revisiting the concept of subluxation, that "S" word that still leaves some of our brethren charging for the exits at velocities at which Einstein would have argued that men and women do not age. (To cite a recent quotation from Peter Sagal on the National Public Radio program, "Wait, Wait ... Don't Tell Me!").

Subluxation, I have suggested in the past,[2] is something of a three-legged stool. For, if we discuss subluxations in terms of misalignments, we bump up against the concept of a vertebra "out of place" and most likely detected by radiographic measurements. That would limit the discussion to a gross displacement without joint dysfunction.[3] For it is known that asymmetric developmental anomalies are common and may simulate true misalignments.[4]

The second leg of the stool would invoke the concept of aberration of movement integrity, either deficient or excessive motion. To evaluate this, we would turn to the principles of motion palpation introduced by Gillet,[5] further developed by Faye,[6] and ultimately buttressed by Jull, Bogduk and Marsland, who used nerve blocks to unequivocally establish the vertebral level of their focus of study, which in this instance was chronic neck pain.[7] Despite the fact that major concerns remain about the lack of interobserver reliability in motion palpation,[8-10] leading Meridel Gatterman to suggest that "reliable measurement of motion segment movement remains as elusive as radiographic detection of subtle misalignment,"[11] the validity of motion palpation seems to have been secured from the studies of Jull.[7]

The final leg of the subluxation stool has to do with physiologic dysfunction, which may be present with or without pain and which may facilitate our understanding of subluxation, but which as an event isolated from a presumed joint dysfunction should not be construed *a priori* to validate chiropractic subluxations. Yet alterations of physiologic functions as consequences of presumed

subluxations remain profound and numerous, very likely extending into the endocrine and immune systems.[12] Furthermore, the joint dysfunction be comes very much an active player in this scenario when one reviews the copious basic science research and firmest evidence offered by animal models.[13]

Here is the perfect example of where we take not necessarily the simplest hypothesis, but the one that has the fewest assumptions. As Gatterman has suggested, the subluxation is best described by offering consideration to all three of these legs - neither using a single leg to the exclusion of any other nor categorically requiring that all three be present.[11] In this manner, there is no obvious reason to discard the concept of subluxation, while at the same time maintaining that it is not a rigid entity, but rather an important model and concept; a work in progress that undoubtedly will undergo perhaps as extensive modification and debate as our concepts of light or psychoanalysis have evolved over half a century. When one considers, for example, the most recent observations of Cramer, Henderson and others in pointing out that degenerative changes (i.e., Z joint osteophyte formation and facetal degeneration) in rats occur following nontraumatic spinal fixation, and that these changes become more and more irreversible with longer periods of fixation,[14] one has to believe the concept of subluxation has acquired a respectable degree of *gravitas* in the scientific community and must be maintained for serious discussion in the immediate future.

In this manner, the 700-year-old concept of Occam's razor has endured to support what historically has been a central concept of chiropractic theory dating back to just one seventh of that period. With the controversy surrounding the use of the "S" word, however, one could argue with some confidence that it has been an extraordinarily close shave.

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