9. Real-world Quantum thinking and subluxation

'*The matter of which I am afraid is that we are missing something big about subluxation. The more the discipline bows to the evidence-free, eminence-based limitations imposed as opinion by the GCC, the less likely we are to achieve the knowledge breakthroughs which are waiting for us*'

Philip Ebrall, 2025

The clinical uncertainty I address in this chapter is how a conventional Chiropractor identifies a spinal level or segment or correctly a spinal mobility unit, about which they can create the narrative I have previously described. (1; Chapter 5 this textbook) For every reader who understands this uncertainty there will be equal and opposite views from others, such is nature of uncertainty in Chiropractic.

The two questions which concern me are:

1. How do different paradigms which identify different levels of subluxation in any one patient all seem to achieve satisfactory clinical outcomes no matter where they think the subluxation may be? Here I consider the Quantum Theory idea of 'setting' something by observation at the time of that observation could provide an explanation (Schrödinger's cat); and
2. How can two chiropractors each in a common paradigm identify slightly different subluxations in a common patient? Here I consider that the Quantum idea of superposition could provide an explanation. Simply put, my C1 LP can equally be your C1 RP.

The answers will go beyond simply identifying a 'subluxation' because my prime argument is that subluxation is not a materialist entity but a timeless idea (2) about spinal dysfunction which is expressed by a conventional Chiropractor as a fuzzy narrative. (1) In essence, I think everything we think we know about subluxation reduces to our best guess about clinical probabilities.

Thus I hold:

'*that subluxation exists as a narrative about clinical signs and symptoms rather than as a description of a materialist entity. This narrative is used by Chiropractors to express in readily understandable public terms the clinical depth and breadth of Chiropractic practice as it may specifically relate to any one patient*'. (2)

Quantum Mechanics 101

Quantum Mechanics describes the world of the very tiny. (3) It may be understood as telling us we '*don't know anything with infinite detail, we can only predict probabilities that things will happen …*' (4) especially when describing sub-atomic particles.

Heisenberg's *Uncertainty Principle* reinforces that we can only know certain things with certainty, but these things are incomplete and don't make a whole. The example given is of a particle where we can know its position but not its momentum, or we can know its momentum but not its position. This is, of course, the intermediary state which is that of uncertainty, knowing one characteristic or another, but not both.

It is this uncertainty which I am applying as a tool to explain how a Chiropractor can think they know where a subluxation is within a patient's spine. By extension, those Chiropractors holding that subluxation does not exist because they have no evidence for it are making the mistake of seeking the wrong kind of evidence. In turn, this makes their position untenable.

This would not worry me if such fantasies were limited to behaviours in an individual's clinic, however when they become the basis for a public pronouncement which affects the Chiropractic curriculum, I become engaged. I am of course singling out the *General Chiropractic Council* (GCC) of the UK which holds by direct inference that any concept of science other than that which has classical-style evidence does not belong in the Chiropractic curriculum. (5, 6)

The problem of the GCC

During the critical peer review of my previous paper on this topic, (7) one reviewer recommended I delete any 'political' references, meaning my references to the position of the GCC. I was unable to accede on the basis of my perception that the GCC is attempting to influence the education of and practice by Chiropractors in a way that is both nonsensical and flawed as in having no evidence in support. (8, 9)

In spite of this strong, antagonistic commentary the GCC remains intransigent, unable to provide evidence supportive of their position and digging their heels in because of their self-perceived eminence. This is an inane and dangerous position for a small regulatory body which is reviewed annually by the professional standards authority (10) which seems to take no notice of this risible position, however the level of intellect of their position is about that which can be expected in a country that now requires every chicken to be registered. (11)

If the discipline of Chiropractic is to advance by making sense of matters reported by Haavik for example, (12) it must not succumb to weak intellects. To be even more direct, the elite who make-up the GCC continue to signal that in their world Chiropractic is simply a continuation of Britain's tradition of bone-setting, (13) a position which I find untenable yet is supported by observed behavioural evidence. It

is a position which most certainly precludes any possibility of seeking mechanisms from within Quantum Theory, which in turn is a position retarding the discipline.

The small print: Decoherence

I am eager to make it clear that at this time Quantum Theory refers specifically to very small particles and I accept that whatever it is that has been happening since the beginning of recorded medical history which has long been called ‘subluxation’ is not a particle; I will call it a ‘thing’. This ‘thing’ may be an agglomeration of particles but is unable to act as we think a Quantum Particle can behave. Such is the nature of the conditions required to allow Quantum behaviour which is accepted as only occurring in pristine environments and certainly not within a complex living thing that we know of, with emerging questions about what happens in the micro-tubules within a neuron in the brain; (14, 15) I come back to this matter.

> It is not an automatic extension that subluxation can thus be only a Quantum thing, rather what I am saying is that Quantum Theory gives us the idea that the universe is probabilistic, meaning that those things we consider real are actually only our best guess at what it could be.

The Quantum brain, as an exception, is an emerging topic which I briefly address below. The critical point to make is that my position remains that subluxation is not a physical or material thing that can be described by classical physics.

Perhaps it is this concept which allows a Chiropractor to make their best guess at what a subluxation may be in a particular patient.

It is known that any object larger than a particle, such as S*hrödinger’s Cat* (8) loses its quantum behaviour because of decoherence. (16) The coherence of Quantum matter is broken when we take a measurement or ‘open the box to see the state of the cat’, and this is our conundrum as it is here that the wave function model is a significant departure from classical physics.

Schrödinger’s equation describes the wave function of a quantum mechanical system, which gives probabilistic information about the location of a particle and other observable quantities such as its momentum and it seems decoherence occurs when something is observed, and that in turn, observation collapses the wave function. (17)

The wave function is said to collapse when a quantum distribution of possibilities collapses to one actuality. We need to hold this thought because in the macroscopic environment of the spine, it is plausible that a subluxation may be a quantum characteristic which collapses to just the one actuality when observed by a Chiropractor. This means the thing, in this case a subluxation, is reacting with its environment and loses its quantum secrecy.

> I do not think it can be suggested that a subluxation is a Quantum Object, I hold that it is not and may never be. My argument is about how we look at it and think about it, and I argue that here, Quantum principles may be helpful.

The matter of observation

The position of Quantum scientists regarding observation contrasts to that of physicists, it is that nothing exists in a proper sense until it is observed. (18) Physicists hold that things do exist regardless, and must be measured and quantified to prove it. This is the trap for those claiming there is no evidence of subluxation; they expect there to be an object with known dimensions which is like thinking a 'headache' can be measured, which it can not be. Here I must clarify that any headache questionnaire does not measure a headache, it documents the response to it by the person with the headache. In turn, when enough boxes are ticked, the clinician can *infer* the patient has a headache in all probability.

Chiropractors can only cut-through the haze of probability and indeterminacy about subluxation by actually observing what they think it is and making a decision that it is where they say it is. As I discussed in my '*fuzzy narrative*' chapter earlier in this textbook a Chiropractor's description of reality regarding subluxation is grounded in their experiences. (19)

We are weak as a discipline in providing proven classical realities describing subluxation and that paper of mine on this topic (7) was my attempt to reconcile this by my pragmatic observation that Chiropractors deal with subluxation daily and therefore it must be 'something'. It is here that Quantum considerations extend our possibilities of 'knowing' what a subluxation could be and where it may be within the spine of a patient.

The rules

There are complex rules around the act of observation. (20) To simplify this, perhaps unfairly we can say that the 'observer effect' is the fact that observing a situation or phenomenon necessarily changes that which is observed. (21) My application of this is that when a Chiropractor has sufficient clinical information from a patient to consider they have identified a subluxation of a certain type in a certain position within the spine, then when they state this, it is a true statement; it changes from possibility to reality. It also becomes a trite exercise for another Chiropractor to try to identify it unless they accept the first Chiropractor's observation that it is where they say it is, and in the case of Atlas Orthogonal (AO) for example also accept the corrective vector found by painstaking measurement of shadows on an X-ray by the initial Chiropractor.

Chiropractors who rely on manual procedures and do not use quantifying tools like measures or a Neurocalometer or a static or scanning sEMG device have, I think,

a more difficult issue with replicability. But this idea leads to a question of whether or not we know the duration of time for which a found subluxation will be reliably known by another. I tend to think that evidence in the form of line drawing and other quantified information grants a little more time than findings by palpation alone which to me seem more ephemeral.

And in turn, this raises the significant question of whether a subluxation identified by line-drawing today, will be the same tomorrow? Or even later today? My doctoral studies included an examination of the errors associated with measuring sagittal angles in the human spine using a device called the Metrecom. (22) All went well (23) until I collected data hourly over 12 hours. I found the sagittal angles of the spine varied significantly during the day. The finding I did not publish was that the sagittal curve changes were synchronous in the 3 female subjects who were menstrually synchronous. The 4th subject was menstrually asynchronous as were the sagittal angle data from her spine.

> My point here being that there is evidence that measures about the spine do not hold steady throughout a day; I can only question whether this holds true for any subluxation we deduce from shadows on an X-ray taken at one particular time and place; is my 10am subluxation still there at 3pm?

Some recent work reported from Harrison's research group (24) of data collected from sagittal views of a cervical spine taken 2 weeks apart in a number of subjects '*found exceptional reliability and excellent construct validity when comparing the computer vision to the human observer*'. (25) While we also know from this group that landmark recognition across time is reliable (25) Harrison used advanced methods including AI comparing an observer and a machine. But he was identifying and quantifying curvature, not subluxation.

I am sure there is a difference between the two ideas and look forward to learning more about this as Harrison pursues his work.

However the catch is that Harrison's 'computer vision' had to be trained, so in fact it would be dreadful if this training did not lead to close agreement on the parameters with which it was 'trained' or programmed.

The most recent work on reliability for the Gonstead paradigm is over 30 years old and reported '*high levels of concordance. In every case, intra-examiner agreement was superior to interexaminer concordance*'. (26) I could not find any reports for AO or Blair line drawing.

Nothing in the preceding few paragraphs has convinced me that any lines drawn on an image of the spine and claimed to represent subluxation have the ability to be replicated as indicative of subluxation over time. One obvious position is that they will naturally be different after a correction has been made, thus the drawn lines are time-limited.

These details may not be an issue given practitioners within these paradigms typically make their imaging and interpret it in real time concurrent with delivering

the indicated treatment. This seems perfectly acceptable to me and satisfies my understanding of Quantum representations. What would worry me is any claim at another later time that one particular X-ray taken previously is representative of a subluxation at the current time. I do not think this is a wise claim and while it may be indicative of where a subluxation *could* be, any extension of such a claim would need real-time evidence from the patient as they present to the Chiropractor at that time.

The matter of our mind

Sir Roger Penrose, Nobel Laurette, proposes that consciousness is caused by Quantum processes. While some dismiss this as a cute eccentricity, evidence is emerging for Quantum activities within microtubules, (27) tiny tubes within every cell in the body. They are abundant within neurons especially in the brain and the so-called 'A lattice' microtubules (28) are thought to act as a '*Quantum processor'* within the mind (29) which could give us consciousness. Penrose also says a lot of Quantum Theory is not understandable and is untrue, as any good scientist would say.

However it is beyond the scope of this paper to discuss the mind beyond acknowledging that it wires-up in different ways (30) to allow each person to see the world in their own 'different' way. On the proposition that humans evolved through small tribes it is understood that we have an 'in' group, our tribe, and an 'out' group, the 'others', perhaps enemies.

> This gives our mind a bias to be more 'on-board' with what members of our 'in' group are saying as we perceive it to be safer for us. For this reason, Chiropractors feel more comfortable associating with other Chiropractors who are also 'on-board' with the 'in' group.

Thus Chiropractors who attend a philosophy symposium where subluxation is a given feel decidedly uncomfortable about attending a group meeting in which subluxation is a foreign topic, and vice versa. Strahinjevic and Simpson (31) mistook this natural behaviour to be a '*schism*' of thought or identity but it is simple, primal tribal behaviour that perpetuates a perceived need for two professional associations in Australia, two in Hong Kong, two in the United States and so on. As we drill down into professional behaviours, we see smaller groupings such as the Gonstead Chiropractic Society Australia in which there is an even stronger commonality of belief, purpose, and skill.

Coming back to the topic of this paper, the role of the mind was explained in one of my papers (7) and needs only a very brief summary here. The brain is in the dark, literally, with regards to what is happening outside the skull and only knows of a world through receiving a variety of electromagnetic (EM) inputs which we call 'senses'. The mind makes something out of these and exactly 'how' is not yet known. I tend to think our mind matches inputs to a mental map allowing us to situate our 'selves' in time and space.

> I think it is extremely important in the teaching of Chiropractic to teach a model which assists students build their own mental map. I have published such a teachable model and stand by it, (32) as mechanistic as it seems.

When it comes to the question of 'subluxation' our mind assigns electromagnetic inputs to points on a mental map we have previously built to allow us to imagine an almost transcendental 'thing' with a substance so strong it allows us to move forward to construct what we believe will be the optimal corrective adjustment, Chiropractic's unique therapeutic intervention, delivered by hand or small hand-held device, with an intent to correct what we have perceived as a subluxation.

Not one step of this process confers a reality on what the mind has created as a subluxation; it could be argued that the subsequent resolution of the patient's complaint is evidence that something has happened. This view is of course abhorrent to physical scientists who want material evidence without confirmation bias, but their concerns are not my problem, rather they are reflective of their intellectual stasis.

A contrary perspective

There are practice paradigms within Chiropractic whose adherents could be concerned with my proposition that subluxation is not a material thing. Practitioners of *Gonstead Methods* (33) for example, and those who apply the *Atlas Orthogonal Procedure*, (34) or the *Blair Technique*, (35) are:

i. insistent on requiring radiographs of the spine for the purpose of analysis, and then
ii. performing a ritual of drawing lines, either manually or with computer assistance, between certain points which have been established within their particular paradigm as carrying meaning, to form a grid with trigonometric values to which a clinical meaning is given. This clinical meaning then guides their physical, therapeutic intervention.

I cannot consider as mechanists those conducting a clinical practice in which they identify subluxation from lines on shadows to determine the site and corrective vectors of their therapeutic intervention, to do so would infer Post-realism and these Chiropractors are most decidedly Realists.

However I feel it could be incorrect to consider them as Heuristicists, using a process of intuitive judgment and operating under conditions of uncertainty that rapidly produces a generally adequate, though not ideal or optimal, decision, solution, prediction, or inference. The problem is that heuristics reduces the complexity of a decision, problem, or question by neglecting to take into account all relevant and available information. Often called '*mental shortcuts*' or '*rules of thumb*', it is not unusual to reach an incorrect conclusion using heuristics. (36)

> It may be hasty to suggest that such shadows allow the probability of subluxation; it may be more considered to think they may represent the probability of the better spinal level to which a Chiropractor should address their assessment and then their therapeutic adjustment with intent.

Collectively they are more an Empiricist using algorithms, which are comprehensive step-by-step processes that reliably end with a perceived correct solution for a specific situation. However Joe Keating was scathing of such an idea, writing: '*Antiscientific bases for chiropractic claims include founding authority, divine inspiration, deduction from the "immutable laws of biology", and private, uncontrolled empiricism. The teleologic proposition of an intelligent spiritual entity (Innate Intelligence), supposedly the source and explanation of beneficial effects of doctors' interventions, places many chiropractic theories of spinal manipulation/ adjustment beyond the realm of science, and serves to alienate chiropractic from the scientific community'*. (37)

It is my view that Keating was unduly harsh in his criticism, yet I too remain a little uncomfortable with reducing this style of clinical assessment to Empiricism. It seems more like Rationalism, in which the Intuition/Deduction thesis, the Innate Knowledge thesis, and the Innate Concept thesis are essential. (38)

> Perhaps it is best to consider them collectively as Rationalists while noting that they aim to cross the boundary between self and the real world by using shadows on a 2-Dimensional film as the medium.

Here, lines are drawn on the shadows of vertebrae and used to identify something that fits into their system of arranging their experiences and concepts. (39) This is similar to Constructive Empiricism defined as: '*Science aims to give us theories which are empirically adequate, and acceptance of a theory involves a belief only that it is empirically adequate*', (40) so for me, Rationalism remains a convenient noun. Any problem of drawing lines on shadows is addressed by Massimi who is comfortable with using various means for observing the unobservable; (41)

> in the case of using X-rays as an intermediary to allow measurements we are cleverly using a means to observe a representation of what we cannot observe in its real form. I am comfortable with this; X-rays help us observe the otherwise unobservable.

In philosophical terms these Rationalists may be after the Vienna Circle of Logical Positivism in which verificationism is valuable, a different argument to mine about a fuzzy narrative. In one sense, the measures made from X-rays may form a circle of verification allowing the assertion 'these markings represent subluxation', or in the case of the AO paradigm, 'these markings represent a misalignment from which I can construct vectors of correction'. I do not know why practitioners of AO prefer

‘misalignment’ over ‘subluxation’, but however silly this seems it is not of relevance at this point. Pragmatically, the moment AO practitioners associate neurological findings with a structural misalignment, as they frequently do, it becomes a functional misalignment and thus within the accepted understanding of subluxation and should be called as such.

Contrasting the Quantum concept with Rationalism

The act of generating Cartesian coordinates and vectors based on lines constructed on a shadow image for the purpose of guiding a Chiropractor’s therapeutic clinical intervention does not make the perceived subluxation a material entity, only a probability. I note that good medicine is built on using similar shadows to guide delicate surgical procedures such as angiography. I am not being critical of those paradigms of Chiropractic which use shadows on X-rays to guide their practice, rather I am supportive of them but after Plato’s Allegory of the Cave, (42) I accept that shadows do not confer reality on an object, no matter their importance to guide safe clinical practice about that imaged object. (43) Sorensen noted ‘*shadows are metaphysical amphibians with one foot on terra firma of common sense and the other in the murky waters of nonbeing*’. (44)

Interpreting shadows certainly gives a welcome level of constructed, interpretative material evidence of a probable site for a therapeutic target but as with the good level of agreement amongst Holt’s observers using only manual methods and no shadows, (45) neither constructed evidence nor inter-examiner agreement confers any reality that the target object is subluxation. Only a probability. Readers of my earlier work will see this statement as me making a progressive concession from my former stance regarding Holt’s findings and I do so because I believe it is earned. I now think Holt et al showed ‘*much higher reliability than has previously been associated with assessing agreement using discrete data*’ (45) with the reasonable probability they are agreeing on the presence or absence of subluxation.

The probability of ‘what’, is the core question.

These approaches achieve a higher level of probability that ‘*if I apply my therapeutic thrust at this location and in this manner, it is probable the patient will report a benefit*’. We know that the benefit to the patient is both subjective (46) and objective. (47, 48)

A reconciliation

As a pragmatist I need reconciliation between the ‘looseness’ of the Quantum concept that any subluxation could be in different locations for different practitioners, and the ‘tightness’ of the Rationalists that it must be at the one site they identify through various means including lines drawn on shadows and the use of other instruments.

From this flows the question of how the site is identified, and whether or not that site is the subluxation in a person, or something else.

In favour of Quantum theory

At this time in the development and interpretations of Quantum Theory within Chiropractic we have no constraints (49) and our scientists are able to take aspects of Quantum thinking and apply them in a sensible manner; '*There is consensus that interpretations should be consistent and empirically adequate. But these conditions are not particularly discriminative*'. (50) Vermass states '*that interpretations ascribe the physical properties to technical artefacts that are entailed by the ascription of technical functions to those artefacts*', (50) which I take as, if you like, 'Quantum approval' of the use of shadows on X-ray to construct a physical property, that of a subluxation. Most approaches, particularly AO, take this so seriously as to determine vectors in degrees for a corrective adjustment; indeed it has been said to me that palpation identifies the subluxation, and X-ray determines the corrective vector. I find this eminently reasonable as it removes any confused objection (51) to the use of X-ray to identify subluxation, while strengthening its use to guide clinical intervention against which there can be no argument especially from a person not trained in Chiropractic and offering only emotional opinion. (52) Our discipline deserves better.

My role as a philosopher in using Quantum Theory is to attempt to describe '*the possible kinds of interpretation, subject only to the constraints of a very broadly construed scientific realism*'. (53) Again this allows me comfort in accepting the line-drawing of Chiropractic Realists as having a meaning as ascribed by them for a particular patient at a particular point of time. It is a tacit principle of all Realist approaches that the clinician is never solely reliant on any one clinical indicator, and that findings from radiographs are considered within the mix of a number of other clinical findings. This point strengthens the clinical validity of the approaches used by those who draw lines.

> On the basis of my previous claim in this Chapter and the theme of this textbook that subluxation is not a Quantum Object but a 'thing' to which a trained Chiropractor is capable of applying Quantum Theory to understand it, we do this at the macro level of a clinician and not at the Quantum level of, for example, Bose–Einstein condensates. (54) We are taking ideas of Quantum states and probabilities to explain the otherwise puzzling question of 'what is a subluxation', and more important, 'how do we identify it?'

My Quantum thinking in summary

With my tongue-in-cheek I suggest there could be a 50% probability I am wrong in the claims I advance in this short chapter. It is incumbent of those who may believe or oppose such claims to advance their arguments in explanation. The indexed

literature of the discipline is the place to do this and is where my arguments first appeared.

The context is that I accept our collective means to identify subluxation in a mammalian spine are well established with good, if not universal clinical utility, including static and motion palpation, the collection of neurological, vascular, muscular, and connective tissue findings, line drawing on radiographs, and findings from various instruments.

I paid attention to these matters in the previous chapter, 8.

But wait, the wild card

As neatly packaged as the foregoing may seem, it becomes a mess due to the wild card of the patient being a human or animal. I have consistently taught that any patient has the right to present to a Chiropractor with any condition, if not several at once.

All patients are therefore consulted, with the Chiropractor holding a high level of suspicion and it is only when the patient has been filtered down to not exhibiting an emergent condition demanding prompt referral that the indulgence of assessing for subluxation can commence.

I consider this an indulgence because spinal diagnosis is a luxurious art to which a well-trained Chiropractor will bring range of associated assessments including from Applied Kinesiology and the full spectrum of Sacro-Occipital Technique and others. However the idea of starting from the patient and working backwards to the decision to apply therapy requires a very different investigation to that which I have attempted here, namely to work towards subluxation through the clinical thinking of the Chiropractor, grasping at ideas from Quantum Theory that help me better understand the two questions I gave at the beginning of this chapter.

Time is on our side

We must not overlook the evidence that the thing I am discussing has a very long history. (55) Bovine has interpreted and reported a document dating from the 10th Century called the Nicetas Codex. (56) It must be pointed out that the Nicetas Codex was written in the 10th century, late AD 900s. It discussed subluxation, and it has copied writings of Hippocrates and Apollonius of Citium, Hippocrates being around 500 BC and Apollonius of Citium in 1st century BC, so the ideas are much older than the actual Nicetas Codex manuscript.

Given the quality of the table frames in the original manuscript (57) it is obvious to scholars that the subject matter (subluxation) was worthy of the best class of artwork by capable miniaturists. I have tracked the idea of subluxation back to the time of Imhotep (58) and together Bovine and I have reported (59) its extensive use

within the medical literature to the time of Palmer. It is a respected idea within historical medicine.

The idea that subluxation is something made-up by DD Palmer is an abhorrent nonsense, with Bovine pointing out that Palmer was aware that the medical profession had long been aware of subluxation. Palmer stated that '*An M. D.'s sprain is a Chiropractor's luxation. As sprains are of all degrees of severity and may be followed by a great variety of symptoms, so it is with displacements of the vertebral column*'. (60)

The gift Palmer gave the world was his novel method of correcting a spinal lesion by hand, without pain. This question long-vexed medicine of the time and which until Palmer had been treated by cutting, burning or poisoning to create a counter irritant in the belief the pain of the spinal lesion was 'all in the head', thus a new pain created by the MD of the time would block it out. Pathetic, I know.

And Palmer did this wondrous work without really knowing anything about Quantum Theory.

Conclusion

In response to my first question given at the beginning, I conclude that the Quantum Idea of 'setting' something by observation at the time of that observation is a valid idea for examining the clinical issue of how different paradigms which identify different levels of subluxation in any one patient all seem to achieve satisfactory clinical outcomes no matter where they think the subluxation may be.

In response to my second question I conclude that the Quantum idea of superposition may be able to provide an explanation for where two chiropractors each in a common paradigm may identify slightly different subluxations in a common patient.

I most certainly conclude that both ideas need deeper examination and now propose the discipline gets on with this work instead of wasting further time or effort in arguing whether or not there is a thing called subluxation. We know it exists as 'something' given its high level of usage within the global profession of Chiropractic. For the GCC to redeem itself it should generously fund such inquiry.

Our collective efforts must now be invested in better understanding what it is, what it does, and how we can best manage it as a clinical entity. The non-classical materialist science of Chiropractic is rapidly expanding, (61) and is demonstrating the benefit of Chiropractic care in depression, (62) and is being applied in brain-based practice. (63)

My last word, as opinion

The discipline cannot let these advances in understanding the deeper impacts of Chiropractic care to be censored by a government agency, the GCC. (5, 7) We can no

longer allow eminence to overpower evidence and all of us within the discipline must take responsibility to build our evidence base and more enthusiastically explore where Quantum thinking may take us.

Instead of censuring answers the GCC should be funding those Chiropractors asking the questions, and be receptive to the answers as they are uncovered and published. Their starting point has to be a mature review of the literature in the fields they are attempting to denigrate, the '*traditional explanatory frameworks such as life force, vitalism and a belief that manipulating the spine to remove restrictions or "chiropractic subluxations" cannot be taught except as concepts which historically shaped the profession*'. (6 p. 7) This is a direct citation from the GCC's position as published in March 2023. Their ignorance of Richards' thesis on vitalism (64) is corporate negligence.

The GCC holds a position of censorship by a government body and while this may be acceptable under the current political regime of the UK where even every chicken must be licensed, (11) it is unacceptable in the world of Chiropractic science.

Even as Sir Roger Penrose, Nobel Laureate, spoke on an emerging role for microtubules as a '*life force*' within the neurological implications of spinal subluxation, those few Chiropractic programs in the UK could not present this material to a class, such is the abhorrence of GCC censorship of curricular content. Yet we know microtubules are the actual mechanism of axonal transport (65) and that this regulates mitochondria along microtubules (66) which indeed is an accepted process of '*life force*', albeit one about which the GCC demands Chiropractic students remain ignorant.

At some time there must be a circuit-breaker, a departure point where the profession pivots to confront and respond to the challenges it faces. I await that moment as the idea is to release the bigness within Chiropractic, (67) not shut it down with bonesetter ideology forced on the discipline by eminence, not evidence.

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