POLYVAGAL THEORY – WHY I'M NOT USING IT

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This is an essay (primarily for professionals) on just a few reasons why I no longer think of myself as applying PolyVagal Theory (PVT) in my clinical practice, how that has come about, and what my current relationship with PVT is. I would like to begin with…

1. AN ALLEGORY

I originally trained in CST with the Upledger Institute in 1994. In the early 1970's Dr John Upledger had been part of a research project to identify a causal mechanism behind the Craniosacral Rhythm, a palpable 5-15 second rhythmic movement of the head, sacrum and in fact, all of the body. They came up with a very inventive solution - the "**Pressurestat Model**"… A coupled relationship between movements of the skull bones, ICP (fluid pressure), CSF fluid production in the choroid plexi of the ventricles, a pressure release valve at the arachnoid granulations, controlled via stretch receptors (nerve fibers were identified by anatomical dissection) in the abutment of the sagittal suture. It sounded really good, and gave everyone confidence they were doing something real and scientifically validated. And the CST treatments worked great.

However, over the next 30 or 40 years there was a revolution in medical understanding of cerebrospinal fluid such that pretty well every single corner of the pressurestat model hypothesis was - to anyone who cared to bring together the information - demolished. Dr John never got to revise his model, and the Upledger Institute continued to teach it as if it were state-of-the-art science for a few decades - I think partly because Dr John was such a charismatic figure and they couldn't dare think that he might have been wrong. Maybe it was also difficult to tell all those people they had taught that the pressurestat model was actually incorrect. Or maybe they couldn't even bear to look at the science because they so closely identified their CST practice - which clearly worked so well - with the validity of the pressurestat model.

What had happened was that the current state of scientific knowledge had simply moved on, turning (as it does) some previously valued manuscripts into toilet paper. What had also happened was that a hypothesis originally meant to explain an unexplained phenomenon had been used beyond its original intended scope in several different ways. It had been used to psychologically prop up an emerging therapy against some very vocal and aggressive critics, and a means to "explain" what was happening. It had been taken up as absolute "truth" instead of remaining a hypothesis. A whole raft of techniques had also been devised based on its principles… But actually most of CST was not in the lest bit dependent on pressurestat principles. Questioning of the pressurestat model was taken to be a sign of hostility to

the whole CST movement. Or at least the whole UI empire, because the UI had franchised out their training all over the USA and in several other countries around the world. It had in essence become part of people's identities - even if they didn't really understand the detail of the physiology behind it (which clearly many did not).

The fact is that - CST is still here, and continues to help people, despite the pressurestat model not being true. Any intervention that is not of a sledgehammer nature is an interaction between two infinitely complex beings, and the nuances of causality are far more tenuous than most people are comfortable acknowledging. I spent about three years visiting the British Library reading research material in an attempt to replace it with something else, and eventually had to admit that I had drawn a blank. But that was actually a liberation, because in being free of the dogma, I could learn to be comfortable with an unknowing, to focus on more important questions… what does my experience tell me is happening? How does the patient's body respond to this or that? The assumptions of the old defunct model being no longer there to provide moral support, I had to find other less superficial ways to understand my work. It was pretty tough for a while, because I was on my own. Most other CST practitioners either didn't care two hoots about the pressurestat model (because they had never subscribed to it), or were so identified with it (they thought it was equated directly with the validity of their practice) as to feel very threatened by what I was saying.

2. NOT "DEBUNKING"

At this point it might seem that I'm just rather ungratefully and perhaps violently pulling old idols off their pedestals. So it's important to say I am very grateful for the UI training I received in the 90's. Dr John's robust, curious and exploratory style has been a foundation for everything else I've done since. However, following his lead (which was also that of AT Still and WG Sutherland), I ended up questioning and asking how the theory I was applying matched the experience and my own observations. The point is, after all, that an exploratory and pioneering book[1] written in the 1970's can't possibly be expected to still be correct 50 years later in all respects.

Similarly I'm also grateful to Stephen Porges for coming up with PolyVagal Theory. Unless someone has the courage and insight to provide some kind of starting point, it's hard to get a handle on anything. We need theories that (may) eventually fail to make us think so that we can then move on a bit further. The way that these old attempts to see the truth are then "debunked" and theirs authors thrown on the garbage heap is something I find really distasteful. The theories (not the authors!) are the *bones along the way* described in Kipling's *Song of the Dead*…

1 Craniosacral Therapy [1] : JE Upledger

We were dreamers, dreaming greatly, in the man-stifled town;
We yearned beyond the sky-line where the strange roads go down.
Came the Whisper, came the Vision, came the Power with the Need,
Till the Soul that is not man's soul was lent us to lead.
As the deer breaks—as the steer breaks—from the herd where they graze,
In the faith of little children we went on our ways.
Then the wood failed—then the food failed—then the last water dried—
In the faith of little children we lay down and died.
On the sand-drift—on the veldt-side—in the fern-scrub we lay,
That our sons might follow after by the bones on the way.
Follow after—follow after! We have watered the root,
And the bud has come to blossom that ripens for fruit!
Follow after—we are waiting, by the trails that we lost,
For the sounds of many footsteps, for the tread of a host.
Follow after—follow after—for the harvest is sown:
By the bones about the wayside ye shall come to your own![2]

As I said, I couldn't find a replacement for the Pressurestat model - I just had to accept that some things might not have an easy explanation[3].

3. THEORY, HYPOTHESIS, MODEL, LEGO, COATHANGER

So, from my personal perspective it feels very much like history is repeating itself. To me, there is a direct parallel with PolyVagal Theory in pretty well every detail of the pressurestat model's history. It seems that every single part of the PVT (scientific) theory has large holes[4],[5].

That shouldn't be surprising. Any scientific theory or hypothesis that attempts to describe the indescribably complex with a few simple rules is *inevitably* bound to fail under scrutiny. PVT is no exception, regardless of how much its supporters might wish otherwise. PVT is a means to describe the way that physiology and emotions and the sensory system link together through the ANS. As such, with such a vast and optimistic ambition, it would be very surprising indeed if such a relatively simple model stood up at all to scrutiny. The fact that it has stood up for so long says a lot of good stuff about how useful it is and how much it has touched something important.

It is a fact that PVT *as a working model* (i.e. the PolyVagal Model, PVM) was never as off-the-target as the pressurestat model always was. Stephen Porges did us all a favour when he made a neat and

2 http://www.kiplingsociety.co.uk/poems_dead.htm
3 For those CST practitioners reading this - funnily enough, all that research and exploration led me to realise that (also) the SBS doesn't move (!) and I have provided a hypothesis that nicely explains the shape (if not the driving mechanism) of osseous cranial motion, to be found at https://www.body-mind.co.uk/craniosacral/pdf/SOJ2015.pdf
4 See discussion hosted by Paul Grossman on ResearchGate
5 Torsten Liem (2021) Criticism of PolyVagal Theory https://www.osteopathie-liem.de/en/blog/criticism-of-the-polyvagal-theory/

acccurate-enough understandable set of simple rules describing something that is so vast and complex that it will never actually be wholly explicable. The PVM was also of its time - whereas the more sophisticated and probably more accurate models developed in the 1970's by Francisco Varola, Gregory Bateson and Gordon Pask et. al. were waaay too far ahead of their time, and too complex for most people to understand… and more to the point, appear to offer less in the way of practical application.

PVT has helped psychotherapists, trauma workers, developmental specialists and bodyworkers all recognise the common ground we are standing on – linked at least partly through the ANS. It has directly energised and encouraged an already existing active convergence of ideas. It also put some important general ideas "out there" that will continue to be true… Such as

- The Window of Tolerance (a balanced ANS state in which there is no overwhelm or other survival activation),
- The general idea of Neuroception, or
- The principle that the act of relating inevitably affects and is affected by physiological processes.
- The vitally important idea that the mind, the emotions and body physiology and intimately connected such that they all affect each other. This was, of course, not a new idea, and Scaer's 2001 "The Body Bears the Burden" was an early and powerful review of scientific literature showing how psychological trauma is related to physical ill health[6].

As such PVT literally generated a revolution in trauma treatment – something to also consider if you are tempted to to "debunk" and discard. But at the same time that doesn't mean there is something sacred about the PVT theory/hypothesis itself. Maybe there are other questions or ideas that can get us to an even more useful place?

Another thing – there is a world of difference between the scientific "PolyVagal Theory" (PVT) and the PolyVagal Model (PVM) that is applied by most therapists in their daily practice. My suspicion is that whilst some do measure HRV as a standard part of their practice, most people don't actually use the core principles of PVT that much. Like the pressurestat model, it has become more of a convenient identification coathanger in an age that demands scientific explanations to "prove" validity. I think some of the continuing traction is that funding requires scientific proof of efficacy, and so people seeking funding for their work need to have a demonstrable scientific basis to convince the funding bodies that what they are doing is worthwhile. The whole system is appallingly skewed – so CBT (a technique that has little to be said for it as a treatment for substantial trauma other than it helps people to "cope") receives a lot of funding in the UK because it is "scientific". So from that point of

6 Robert Scaer (2001) The Body Bears the Burden: Trauma, Dissociation, and Disease. Publ. Routledge ISBN-13: 978-0415641524

view, we will continue to need PVT for some time until something else comes along that has the scientific Kudos to replace it.

PVT arrived on the scene as a technical addition to an already mature tradition of somatic psychotherapy and trauma treatment. If I analyse it, hardly any (if any at all) of the (nominally) "PVT" principles I now apply in my own practice have anything to do with the core elements of PVT. Ventral/Dorsal Vagal characteristics & RSA hardly appear at all. And (having explored the practical application for over 15 years now) I now find the evolution from hunter-gatherer to civilisation more of a leap than any evolved differentiation of neurology. In its place I have come to use a model which is a combination of :

1. an expansion of the really crucial idea of Neuroception into something more about "how do we determine Meaning? And sustain a suitable balance between predictability and surprise?", incorporating McGilchrist's divided brain[7]; and
2. an overview of the spectrum of ANS response-states related to embodied experience[8].

Neither of which are anything to do with the core PVT *theory* - other than some of them are pieces that have been gathered round the PVT *model* rather like a caddis fly gathers stones around itself. Or in this case, gemstones.

It's also important to recognise that **research is NOT praxis, and the rules are very different**. As a MODEL (what I use in my practice) - as opposed to a Theory/Hypothesis (what scientists debate about, and material published in peer reviewed journals under a set of rules that are rather inimical to holistic models) - my interest is not in defending one theory or another to the knuckle, but in constantly adjusting and adapting the working model so that its ridiculous Lego-like simplicity still provides a useful and workable best match to my personal experiences and to those of my patients. This varies with each individual, and – if I am working reflectively – matures and evolves over time

There is also no doubt whatsoever that the Vagus nerve is important. But from my <u>personal</u> perspective, that importance arises from a principle of Health rather than pathology. I'm less interested in what can go wrong than how I can optimise available possibilities, and broaden the total spectrum of response. So I've increasingly realised that my interest is not strictly with the vegetative Vagus, but with the whole ANS. I believe the same goes for response states – there is not a Vagally dominated social engagement, because quality social engagement requires that we are attentive, and that there is adequate sympathetic tone along with engagement of the senses. In this, as in other states of attention, one can on the one hand state that the arousal is *mediated by* the ANS. If the ANS is already primed to respond in a certain range – it has a fixed trajectory - then arousal may also be *driven by* the ANS.

7 The Master and his Emissary : Ian McGilchrist
8 https://www.body-mind.co.uk/a_resources/doc.html

However, the system can equally be unpicked to say that the ANS can also be influenced by or even driven by attention and body posture – something that has a better match to lived experience outside of chronic hyperarousal. So thinking of the ANS driving all of this is only really true if the ANS is no longer influenced much by cognition – i.e. is in some kind of trauma… And where we want to get to in trauma therapy is that the ANS is once again not running the show. Thus, whilst an ANS-based model is useful in recognising pathology, it is too restricted on its own to be a universal guide to healthy adaptive states.

> **"His early papers are paralyzingly beautiful but they are thoroughly corrupt with errors, and this has delayed the publication of his collected works for almost ten years. Any man whose errors can take that long to correct is quite a man."**
>
> – Robert Oppenheimer (director of the Manhattan Project) : Memorial lecture delivered on 13 December 1965 at UNESCO headquarters to commemorate the tenth anniversary of Albert Einstein's death

I should briefly note here (so as not to go into a big technical discussion) that over the past 15 years I have adapted Polyvagal Theory according to my experience, and find it interesting that the end result has gravitated towards the "Neurovisceral Integration[9, 10] Model", otherwise called the "Generalized Unsafety Theory of Stress" (GUTS). Which consists of a series of feedback loops in which consciously captivated attention (through memory or appreciation of beauty, or similar choices of focus) feeds back to "lower" autonomic/homeostatic levels.

9 Thayer, J. F., Hansen, A. L., Saus-Rose, E., & Johnsen, B. H. (2009). Heart rate variability, prefrontal neural function, and cognitive performance: the neurovisceral integration perspective on self-regulation, adaptation, and health. Annals of behavioral medicine : a publication of the Society of Behavioral Medicine, 37(2), 141–153. https://doi.org/10.1007/s12160-009-9101-z

10 Sylvain Laborde, Emma Mosley & Alina Mertgen (2018) A unifying conceptual framework of factors associated to cardiac vagal control. Cell | Heliyon | Review Article | 4(12), e01002, December 01 https://doi.org/10.1016/j.heliyon.2018.e01002

4. SO WHERE DOES THIS LEAVE PATIENTS?

Ah – tricky.

We live in a world that almost worships science, and so many (though not all) people demand that what they use is "scientifically valid". This is, of course, a complete distortion and misunderstanding of what science is. It is a cultural use of science as a psychological prop in an increasingly uncertain world – ironic because science is always (and should always be) revisable. Science is the direct ancestor of Chairman Mao's little Red Book of perpetual revolution. It is the child of Kali and not a cozy and dependable security blanket that will remain reliably recognisable for thousands of years.

So perhaps a major motivation for writing this is that I have seen some people discard (so-called) PVT techniques that have worked very well for them - because they heard on the grapevine that PVT is "not scientific". Heaven help them if they don't understand the scientific approach and can't discriminate a Facebook meme from a personal experience. So if this PVT edifice is to change (which eventually it must so that we, as professionals can move on to something better and not be fossilised), there will inevitably be some fallout – collateral damage. Something I don't particularly relish. It's not going to be an easy transition, starting from a scientific hypothesis that has been sold as the absolute truth – going back to a less certain and less easily soundbitten world.

The lessons from all this should include:

1. as soon as a theory is commercialised and branded – it's inevitably going to turn out to be a long and slippery slope. Branding and Science (and long term interests of patients) are not happy bedfellows. Science advances by noticing the messy unworkable and inexplicable edges to current theory, and then finding something better – whereas Branding requires that there are no messy edges (or questions) at all.
2. somehow all of us need to become less uncomfortable with uncertainty, more interested in personal experience, and less beholden to (and dependent on) every single utterance of the Great and Good. Trust of our own internal process – how our bodies can tell us what is right or not – is from my personal point of view – probably one of the most important gifts that can be given to anybody. Any theory about human experience MUST bow to subjective experience rather than to academic kudos and article metrics. Reductionist experiments that rub abrasively against experience have probably sacrificed something important in their design.
3. theories based on pathology provide a viewpoint that only sees the world from the point of view of pathology. They may provide a useful viewpoint, but it's important to recognise that view is a very narrow and limited (and even perhaps distorted) glimpse of the capacity of our organic self to adapt and thrive.

4. A sense of humility (and an accompanying sensitivity to Hubris) is well worth cultivating. Look again at Robert Oppenheimer's eulogy to Albert Einstein (above). We are faced with living beings – that are not machines. They are not linear, and our technical understanding of them is necessarily going to be incomplete because it is not possible to study something that complex (using our present scientific tools) without cutting into it. Life is more than any scientific analysis that might be made of it. Or models should complement (rather than replace) compassion and humanity.