

## THE TECHNICAL ACUPUNCTURIST – WHERE DID THAT WEEK GO, AND WAS IT HEALTHY?!

DAVID MAYOR

I love the essential touchy-feely simplicity of acupuncture – hands, needles, intention, and someone willing to be a recipient for my ministrations. But I also enjoy the mental flurry of the teetering technical superstructures that have grown up around such simplicity – the funky gadgetry, the mind-bending research. Body and mind, *yin* and *yang*.

As a geeky gawky boy, I was fascinated by electricity, and even before I started training in Five-Element acupuncture in 1980 I was already translating and editing material on the gadgetry side of acupuncture from Romanian<sup>1</sup> and German.<sup>2</sup> As a result, growing into the practice myself at the Leamington college came as rather a culture shock (although less so, perhaps, because I had already spent three years training in biodynamic massage). Undeterred, I somehow

managed to get my body and the two halves of my brain to cooperate, and from 1988 began integrating electroacupuncture (EA) into my clinical practice, along with TCM, massage and some nutrition. Eight years later came the synchrony of Elsevier looking for a book on EA just at just the time that I was considering writing one. This project<sup>3</sup> became a preoccupation (my wife would say an obsession) for the next 11 years, making a big hole in my practice as a result! (Big learning ...). Along the way, I also acted as a (hopefully reasonably impartial) consultant for several companies marketing EA equipment.

During those 11 years, I became more and more fascinated by the brain and neurophysiology, and kept coming back to the idea that EA at particular frequencies might stimulate cortical activity at similar frequencies. This occurs for photic (light) and auditory (sound) stimulation – so why not when we zap our patients electrically? This was one tenet of the Liverpool group that developed the version of EA that I first used,<sup>4</sup> and became the topic of the first (last?!) major conference presentation I ever gave (for the AACP, the Acupuncture Association of Chartered Physiotherapists, in 2001), in which a ‘simple’



experiment to test the idea was proposed.<sup>5</sup> (I'm never quite sure, but I suppose it was because of this that I was made an honorary life member of the AACP.)

For the past five years, I've become more and more involved in research – first as an honorary research fellow at the University of Hertfordshire under the tutelage of electrotherapy maestro Tim Watson, then as a member of the BAcC's research team/advisory group, and more recently as a member of the Confucius Institute Research Collaboration (CIRC), an informal talking shop at London South Bank University. In 2011, I finally made the leap into doing something about that 'simple' experiment proposed 10 years earlier, and have been collaborating since with Tony Steffert, a quantitative EEG expert [see elsewhere on this website], to investigate the question of a central 'frequency following' (resonance) response to peripheral stimulation in the form of EA or 'TEAS' (transcutaneous electrical acupoint stimulation). A big thank you here to those BAcC members who have offered themselves as subjects for this undertaking.

So what have I done this week? I've not only seen patients (and no, I don't just wire up and zap everyone who walks in the door!), but also:

- Presented two posters at the 15<sup>th</sup> AACP conference with Tony (one of which we'd already shown at the ARRC symposium in March). Although these may not look much,<sup>6,7</sup> they took months to prepare – an alchemical (mad?) process of boiling down our results into something manageable, and along the way becoming clearer about where we need to go next in our project.
- As part of this (Pilots 2-4), started processing our data on respiration rate variability (RRV – like HRV for the heart). This looks as if it might bear fruit, even though the whole idea of RRV is relatively novel.
- In addition, discussed wording of our study questionnaires on the 'expectation of feelings' experienced in response to EA and TEAS with Louise Partington, currently a student at the Northern College of Acupuncture who – as a market research expert – successfully demolished my original wording as ambiguous (Ouch!).
- Revised (for the nth time) an article for *Acupuncture in Medicine* on the clinical applications of EA and its endorphin mechanisms.<sup>8</sup> This was a by-product, suggested by the journal's editor Adrian White, of a chapter on EA in preparation for the new edition of Elsevier's *Medical Acupuncture* textbook. This is the first time I've submitted a long article to a peer-reviewed academic journal, and the convoluted process has been a chastening experience! (Not to be taken on lightly ...).
- With Sean Walsh (at the University of Technology in Sydney), have been gearing up to sign a contract with Elsevier for the second edition of the EA textbook originally published in 2007 and now increasingly passé in our world of accelerating research. Indeed, if there's anyone out there who would like to give a hand in putting the new edition together (or if you have an EA case history you're itching to see printed), do get in touch. Hopefully the book will be published in 2015, but there's a lot to do before then.
- With my consultancy hat on, carried out a 'charge balance' test on the ES-130 EA stimulator (Ito, Japan). (Anyone to whom I've taught the rudiments of EA should know about this!) The manufacturers claim the ES-130 is a replacement for the IC1107+. I always thought the latter is approximately charge-balanced, but testing

showed that at high frequencies *neither* is (the ES-130 is favoured by Joe M Helms<sup>9</sup> for that very reason). Caveat emptor!

- Started evaluating an intranasal low intensity (630-670 nm 3-5 mW) laser stimulation device<sup>10</sup> that is claimed (with much fanfare from its manufacturers) to improve blood rheology as well as rhinitis. In searching the literature for this, I've been helped a great deal by one of the PhD students at LSBU, Xiaoyang Hu (Mio).

There is some self-interest here (always a good motivator). From sitting for far too long over the years at a computer (and before that, at a typewriter<sup>11</sup>), the circulation in my legs is not good, and in a few weeks' time I face foot surgery for a familial bunion. So I thought I'd technicalise my life by sticking a laser up my nose in the morning and using TEAS (2 Hz trains of 80 Hz 180  $\mu$ s pulses, 50 mA, to ST36 and SP6; Primo, Cefar, Sweden) on the affected leg in the evening, to prepare my much abused body for surgery (in addition to exercise, herbs and appropriate nutritional supplements, of course). Hopefully this will speed recovery. The TEAS does at least seem to calm the mind after a long day of data processing, and it's also intriguing to watch the foot on the treated side twitch in time with the stimulation ... while the other foot does a separate dance, at around three times the frequency. Most peculiar! And perhaps another example of some kind of resonance – though this time seemingly within the body, side to side, not between body and brain.

- A new and exciting development this week has been an invitation to act as (unpaid!) advisor to a student writing a PhD on one aspect of our research project (assessing variability of EEG and ECG signals) at the University of Hertfordshire's Centre for Computer Science and Informatics Research. Now that's going to be a challenge!

All these 'technical' activities have meant stretching my own brain to its limits in every conceivable direction, learning about data processing, stats, research methodology, time series analysis, nonlinear measures. Wonderful stuff! And it's good to feel, even in my sixties, that I can still do some of this, even if I often trip over myself (that foot again) and make mistakes. I have learned to take on the challenges, not to get too discouraged, to persevere, to ask for help.

And now, here I am writing this piece of braggadocio, not at all technical – a bit of fun to entertain and amaze. I hope you've enjoyed it. As for me, this afternoon, to rebalance, to move back to *yin* from all this head stuff, I go for my own massage. I am fortunate that my wife keeps me very aware that too much left-brain focus may neither be healthy nor good for the way I interact with my patients. All in all, I feel privileged to be able to live such a rich life, on so many levels.

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This article was written as a light-hearted contribution to a themed issue of *The Acupuncturist* (newsletter of the British Acupuncture Council) on 'the technical in acupuncture' (Summer 2013, pp. 6-7). David Mayor is an acupuncturist, researcher and sometimes dancer who lives in Hertfordshire.

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11. Search 'David Mayor' in the Mayor/Fluxshoe/Beau Geste Press (BGP) Archive, Tate Archive, London. <http://archive.tate.org.uk>.