



NEUROPTIMAL[®]
ADVANCED BRAIN TRAINING SYSTEMS
TRANSFORMING LIVES SINCE 2000

2018 NeuroOptimal[®] Conference: Transforming Lives

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WHAT IS NEUROOPTIMAL[®]?

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NeuroOptimal[®] Is...

- A brain training system that....
- Provides information to the brain...
- About what it has just done, allowing...
- The brain to (re) organize itself.....
- And when it does, a whole lot of challenges can fall away.
- PS: It's YOUR brain doing the work 😊

Neurofeedback in Early 90s Involved:

- Extensive initial evaluation and diagnosis, then evaluation before each session to assess side effects from previous session
- Choosing a protocol (yet limited toolbox)
- Closely watching client for side effects
- Requiring conscious client effort – make balloon rise, later make an orca swim, later evolving to games

Neurofeedback in Early 90s

- Toolboxes: SMR/beta (ADD) or alpha-theta training (exploring consciousness)
 - Augment SMR, suppress theta (4-7 Hz)
 - Then moving sensor, augment beta while still suppressing theta
 - OR Augment Alpha and Theta (problem with re-immersion into trauma)
- Functioned as two separate camps
- No overarching theory of neurofeedback incorporating these two approaches

Where It All Began

But there was one interesting model that utilized both approaches –

Val Brown's Five Phase Model 😊

Five Phase Model: Bad Theta and ...

While the field identified theta as 4-7 Hz,
Val distinguished two different types of theta:

- Bad theta 3Hz and 5Hz
- Identified **3 Hz as emotional reactivity** and **5 Hz as cognitive reactivity**
- Trauma carried here
- Bad Theta was always suppressed, solving problem of re-immersion into trauma

Five Phase Model: ...Good Theta

- Good theta 7 Hz
- 7Hz is the Aha! frequency
- Good Theta allowed to occur naturally by creating the right circumstances
- Would result in alpha-theta crossover considered to be very healing (a la Penniston)

Five Phase Model

- Logical progression through five stages for everybody, all training at Cz:
 - Augment 14 Hz (SMR), Suppress 2-6 Hz
 - Augment 15-18 Hz (low beta), suppress 2-6 Hz
 - Augment alpha (8-13 Hz), suppress 2-6 to Relaxation Response
 - Continue augmenting alpha to alpha-theta crossover
 - Global synchrony on four channel machine
- Client “got everything”

Other Groundbreaking Aspects of Five Phase Model

- **No diagnosis**
- **No decisions** needed by trainer/clinician beyond when to progress to next stage
- Claimed terms like Alpha, SMR etc too vague – brainwaves better described in 1 Hz increments (precursor to Matrix Mirror)

Context: State Training

- As a result of Val's work, we saw a lot of client gains due to reduction in troublesome frequencies (3 and 5Hz). These are the **suppress** frequencies and are the "**storm**"
- But the **augments** you use are the **nuance**. They create the **states**.
- Each state is a distinct state of awareness: SMR, Beta, Alpha.

Context: State Training

- When we say other systems are “Telling the brain what to do”, we are talking about their use of augments and suppresses with their respective goals

Period Three: Our Joint Model

- Val's theoretical thinking came together with my practical explorations
- **New Suppresses, always in play:**
 - Now 0-6 Hz (bad theta, never good theta)
 - 23-38 Hz “worry frequency” (dredging and mulling)
 - 9-19 Hz eyes open alpha

Period Three: Augments

- Augments
- Period One:
 - 14 Hz SMR on right
 - Beta 15-18 Hz on left (later removed)
 - Effect of each balances the other out
- Period Two:
 - Alpha 8-13 Hz
 - Allowing 7 Hz to emerge naturalistically

Period Three: Augments

- Period Three:
 - 21 Hz “aura” frequency
 - 40 Hz
- Mystical Symmetry
- Required careful watching of Matrix Mirror (those 1 Hz bars)
- Balanced each other out
- HUGE advantage of Matrix Mirror was seeing effect before client felt it

Period Three: Thresholding

- Field universally used **static** bar thresholds
- **Dynamic** thresholds simply a static threshold that resets every few minutes based on moving average
- No function beyond setting a goal to **consciously** work towards

Period Three: Box Thresholds

We used Box Thresholds (sandboxes):

- Had upper and lower levels
- Purpose to capitalize on the unleashing effect of bracketing
- **Dynamical (not dynamic) Thresholding**

Dynamical Thresholding

- Allows brain to release its “points of stuckness”
 - Drop away of “same old same old” patterns of behavior (suppress frequencies)
 - Increased flexibility of a myriad of new ways to be in the world (augment frequencies)

Period Three Approach

- Logically threshold met when:
 - Suppresses in box or below
 - Augments in box or higher
- In each session, clients were progressed through three separate periods, each with its own screen
- Clients knew what stage in and conscious co-operation on part of client was still considered important

Period Three: Comprehensive Screen

- So...next step: I asked Val to create me one screen with ALL the Periods on it — Comprehensive Screen.
- Now didn't have to stop training between periods-- just had to pull boxes in and out of play
- I was curious to take clients through the three Periods without them knowing when I was changing the contingencies.
- What would happen?

Period Three Comprehensive Screen.

- It worked!
- Proved once and for all **conscious mind had no role in what we were doing.**

Background

Previously:

- With advent of two channel equipment, Val and I had discovered that two different states of consciousness, SMR and beta, could be trained at same time
- So I had started combining SMR and beta training together
- And against that backdrop.....

From Comprehensive Screen to Comprehensive Feedback

- Was only a “small leap” to say — what if I brought ALL of the boxes in the Comprehensive Screen into play **at the same time?**
- Could brain figure it out?
- Think what doing here —
 - no information about which frequency was being triggered,
 - and all different competing states
 - 16 different targets at that point (20 now)

Yet brain figures it out!

And the Miracle Was....

- Now every frequency being up-trained was balanced by its opposite, moment by moment!
- Minimized possibility of side effects
- No need to watch the Matrix Mirror any more
- And training was comprehensive –meaning all Targets in play all at once!

Box Thresholds: In or Out

- Remember, for box thresholds, being above (augments) and below (suppresses) was OK.
- Took next step towards non-linear model
- **Now moved to only IN or OUT**

Box Thresholds: In or Out

- In one fell swoop, we had changed two things
 - **Removed any difference between an augment or a suppress- HUGE**
 - **And because of that, no longer state training.** We had moved to an information model (mirror).
- So no longer possibility of side effects from training those states
- **This is “not telling the brain what to do”**

Finally, Neurofeedback for the Rest of Us

- Requires no evaluation or diagnosis
- And no skill to operate
- Offers real time de-noising of signal
- Is totally non-invasive because no state training
- Requires no decision making (= very low risk/liability)
- Offers effortless, safe, yet...
- Powerful transformation

Achievement of a Vision

- A comprehensive training
 - **for everybody, and**
 - **by anybody.**
- Now THAT is elegant! 😊



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