Module 1.4

The Neuro & the Vocal: *Building On Biological Tools*

Unit 1, Week 4 (of 4)

Here we revisit what we've learned so far, and introduce the relationships, showing how one idea leads to the next. Motor memories -> predictive brain -> interoception -> attention -> phonation.

Week 1.4: The Neuro & The Vocal introduces the idea of one neurological principle leading to and/or informing another. We practice Principles 1 and 2 (*Finding the Tinn* and *The Buzzy Bridge*) to gain confidence.

Overall focus of the class: Definitions of interoception, motor memory. Application of *Find the Tinn*, Principle 1.

- **Before class:**
    - Cue up the video

- Check in 15 mins before class: any emails or texts?
- Open or print trainer notes

- **START RECORDING**
- **Housekeeping: 5 mins**
  - 4 kinds of people who take this class:
    - I'll do it when I'm perfect
    - Yeah, yeah...technique. I'll do the exercises and see.
    - Neurodivergent people: "You're not the boss of me. Don't tell me what to do."
    - People who are interested in the unique information and get in and mess it up.
  - ***It's up to YOU how much you want to get out of this class!***
  - **Ask for volunteer for the next coaching observation.**
- **Check in: 15 mins**
  - **Applying Principles 1 and 2: share your experiences**
    - The reason is to gain confidence.
    - The instructor should be encouraging by calling attention to the things that were right (or went well).
    - The instructor should be encouraging by providing context (e.g., it's voice lessons. Making mistakes is ok).

- “Yes, and” if someone shares something that is off track. (e.g., “Yes, that can be very effective. The way we’d approach that with a NeuroVocal framework is…)

- **IF NECESSARY: Ideas for prompts**
  - Have you tried on yourself? Students?
  - What’s come up?
  - Brain observations
    - Remember experiential blindness:
      - When the brain has no memory to reach for the thing feels *unfamiliar*. Familiarity = strong neural pathway.
    - Introduce coaching practice by offering alternatives in a way that allows the singer to self-assess. “We’re going to A/B this…”
      - Cranky goose
      - Sneer
      - Concepts: make the sound of a…
      - It’s a journey

Play video 1.4_The Neuro & the Vocal

- **Play Video: 6 mins**
- **5 minute break**
- **Before the lecture,** remind people to schedule their private coaching with you. This is where they will practice the applications of Principles 1 and 2.
- **Lecture 30 mins:**
  - **Most important points: experiential blindness and how motor memories are built** (i.e., small steps, be patient)
  - **Review the model that** was presented in the video.

    RECAP Concepts
    - Motor memory
      - you're unaware by definition
      - Takes time (longer than you think) and repetition (shorter than you think) to build
    - The predictive brain
      - It's always happening.
      - We can show the brain what we *want it* to predict.
      - Teaching the predictive brain
    - Interoception
      - Different people have different experiences + timelines

        - There's no bad outcomes - be aware of *your own* expectations
    - Intention + attention
        - attention amplifies neural signals
        - Do the math.
        - Now that I'm familiar with the feeling, I have the *intention* to call up this feeling, as I pay *attention* to it I get this result.
    - Phonation
        - Can be tricky to learn (it's a balancing act)
- **Lecture (if there's time) about HOW the brain learns to predict:**
- Talk about *experiential blindness*. In the video we used a visual example, but experiential "blindness" can occur with any new sensory data. Remember...

  MEMORIES + SENSORY DATA = PREDICTION.

  Example of a **neuroplasticity in the immediate**, paying attention to what is known vs. what is new: "smell of cookies" in a house you know.

  Not the same for motor memories, which are active.

In our exercise we've called it ***learned listening***, because that's what auditory neuroscientist Nina Kraus calls it. As we become more familiar with *the ingredients of a sound* we create hyper-specific memories that allow the brain to identify those sound components (or ingredients).

> **An example of this** would be the way in which you are now, at your current level of expertise, able to hear and appreciate singers in a way you were not capable of when you were 14.

The brain is searching for a memory ***as data is perceived***, so if it can't find a memory, it does other stuff. For example, if it's a short thing, you wait while it guesses, or you wait for an additional piece of sensory data to enter the mix so that your brain can retrieve an appropriate memory. (e.g., you are unable to identify a sound until another "sound ingredient" is added.)

> BUT... if there *is no memory*, as is typically the case with the "hnn" exercise (or really, most of the

exercises we'll do) the brain is using *more incoming sense data than predictions to try to make sense of what's happening*.

Let's refer to that immediate neuroplasticity as *making a neural pathway on the fly*. The way this translates to lived experience is typically some form of *emotional* discomfort. (We'll talk later about why that may be.)

The singer is exerting a lot of cognitive effort (attention spotlight, coordinated phonation with a very specific intention) **toward something for which they have no memory.** They *feel* frustrated, uncomfortable, or irritated. They may direct that at you in the form of questioning or challenging you.

LET THEIR BRAIN SOLVE THE PROBLEM!

As *soon as the brain has a memory* for this feeling/sound, all of those feelings tend to disappear. It doesn't take long. And once the brain knows what to predict, we can move on.

- Tell them that next week is a workshop where we'll practice with one another.

Closing remark (they have this in their class notes)

EVEN THOUGH this is a Level 2 class, it's still challenging to move away from "this is music... we have to be in tune" as well as expectations for yourself to entertain or meet goals.

This more physiological guided way of making sound takes practice. The way we make sound shapes the brain which shapes the way we make sound.

It will lead to singing but it's not singing. The constructs we have around singing don't apply. The work we do here is *informing* our singing, bringing it to a place of ease and sustainability.

Unfamiliar things are challenging. Give your brain a chance to learn.