

Module 1.4

The Neuro & The Vocal: *Building on Neurological Tools*

Motor memories

- Ideas about neuroscience applied to phonation.
- *Your brain sings before you do*: refers to motor memories
- Motor memories: a type of procedural memory
 - automatic
 - unconscious
- Procedural (motor) memories:
 - created by repeating a task enough times for your brain to build a neural network specific to that task.
 - automatically applied to all actions from the simple to the very complex.

Predictive brain

How does your brain know what motor memories need to be retrieved?

Your brain predicts; all day, every day

- To predict:
 - brain looks at what it already knows and makes its best guess
 - brain references existing memories and instantly processes the sensory data
 - Brain guesses what to do

Your brain combines things you already know with sensory information it's getting in the moment, to produce everything you see, hear, smell, feel, and do.

Interoception

Interoception:

- how things feel inside your body
- How your brain perceives the internal state of your body
- part of the somatosensory system.

You're unaware of the brain's management system (based on interoception) unless there's something "wrong" or a need that needs to be met (e.g., hunger or fatigue).

Movement can provide an opportunity for you to become aware of certain interceptive messages.

Mindfulness practices use interoception.

- Phonating is a type of movement:
 - Respiratory system
 - phonatory system
 - vibrating air you create
- Phonating can be experienced in an interoceptive way.

- Singers can learn to have an experience of their own singing that does not rely exclusively on what they hear.

Attention

- Selective attention = one of your neurological superpowers
 - Sensory receptors are always “on”.
 - Selective attention allows you to “point your attention spotlight.”
 - Selective attention allows you to
 - meet your intentions
 - have agency in your actions
 - manage your cognitive resources.
- Singers can learn to:
 - create an intention for a feeling

- point their attention spotlight on the tiny interceptive messages available from phonation
- experience their singing in a new way.

Phonation

- Singers can use a neurologically focused pathway to access their voice in a new and possibly unfamiliar way.
 - make a sound on a sustained pitch without singing.
 - make a sound based on physical feelings, rather than on an intention for a specific tonal outcome.
 - have a sensory experience of your phonation being integrated with your respiratory system.

This way of making sound helps keep you focused on your own experience of your voice.

- Singer experiences:
 - predictive brain

- Interoception
- Intention + attention
- A voice that feels wonderful and “natural”

This way of phonating is both efficient and appropriate for popular styles.

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- Exercise:
 - Hunn
 - Hunn-ee
- Homework
 - Increase your awareness of how this functions
 - with yourself
 - 1-3 students
 - Blog: [The Curse of the Smart & Talented](#)
- A couple of cool singers:
 - [Sammie Rae & the Friends](#): *This singer is what we might call “M2 dominant.” The band presents music that is influenced by R&B, jazz, blues, & pop. Very fun!*

- Brittany Howard: Formerly of the band “Alabama Shakes,” this singer/songwriter is someone who loves using her voice to create various textures. Listen to how she uses registration not just for ranges, but also for vocal textures.
- Support materials
 - Hunn-ee script + crib sheet