

Unlocking the Voice:

How Trauma, Nervous System Dysregulation and Safety

Impact Vocal Expression

by Katrin Koschalka

Globe Institute

Sound Healing and Therapy

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1. Introduction

The human voice serves as a powerful medium of self-expression, communication and connection.

However, many individuals experience difficulty accessing their speaking or singing voice,

particularly in moments of stress, emotional distress or trauma. This phenomenon is deeply

intertwined with the regulation of the autonomic nervous system (ANS), which governs

physiological responses to safety and danger. When the nervous system is dysregulated - often due

to trauma - the voice may become constricted, silenced or otherwise inaccessible.

Recent research, particularly in the fields of neuroscience and trauma studies, highlights the critical

role of safety in vocal expression. Polyvagal Theory as introduced by Stephen Porges, reveals that

our ability to access and use our voice is dependent on our perceived sense of safety. When we feel

safe our voice emerges freely, when we feel threatened it becomes strained or suppressed. By

understanding how trauma and nervous system dysregulation interfere with vocal function we can

develop effective interventions to restore vocal access. This paper explores the intricate relationship

between trauma, nervous system regulation and vocal expression, emphasizing the importance of

safety in unlocking the voice.

RESEARCH QUESTIONS

Why do individuals experience difficulty accessing their speaking or singing voices?

How do trauma and nervous system dysregulation contribute to this difficulty?

What role does safety play in restoring access to the voice?

2. The Nervous System and the Voice

The human voice is a rich tapestry of physiological and emotional signals, intricately linked to the nervous system. As Kreiman and Sidtis (2011) note, "the voice carries biological, psychological and social information that listeners process to derive various inferences about the speaker". By observing variations in tone, pitch, volume, prosody and other vocal characteristics we can infer the state of an individual's nervous system. These changes are rooted in complex physiological processes that govern both vocal production and autonomic nervous system regulation.

2.1 The Autonomic Nervous System (ANS)

The ANS regulates involuntary physiological functions, including heart rate, respiration and digestion to maintain homeostasis and respond to environmental demands. It is subdivided into the sympathetic (fight-or-flight) and parasympathetic (rest-and-digest) branches. These branches influence the muscles involved in respiration, phonation and articulation which are key components of vocal production.

2.2 The Three States of the Autonomic Nervous System

In order to be able to adjust our system due to varying environmental challenges, enabling the body to efficiently manage safety, mobilize energy for survival and conserve resources during extreme stress the autonomic nervous system engages three different states - ventral vagal, sympathetic and dorsal vagal. As Porges (2011) explains, "The autonomic nervous system provides the neural platform for social behavior and emotional regulation through its management of visceral state".

VENTRAL VAGAL STATE (SAFETY AND CONNECTION)

This state is the foundation of social engagement and emotional regulation. It is characterized by parasympathetic dominance, where the body feels safe, calm and connected. In this state, emotions like joy, gratitude, curiosity, love and contentment emerge. The heart rate slows, respiration deepens

and digestive processes function optimally. The ventral vagus nerve supports prosody, facial expressions and listening, facilitating connection.

SYMPATHETIC STATE (FIGHT/FLIGHT)

Activated during perceived threats, this state mobilizes energy for survival. The fight response often manifests as anger or assertiveness, while flight represents escape or avoidance. The heart rate and respiration increase, cortisol levels rise and blood flow is directed to the muscles.

DORSAL VAGAL STATE (SHUTDOWN AND DISCONNECTION)

When the threat is overwhelming or persistent, the body shifts into dorsal vagal dominance, a parasympathetic response associated with immobilization and collapse. The heart rate decreases, respiration becomes shallow and there is a sense of numbness or disconnection. This state reflects the body's attempt to conserve energy during extreme stress.

These states are dynamic, with the ANS continuously assessing cues of safety or danger in the environment (Porges, 2011).

2.3 The Physiology of Voice Production

Voice production represents one of the most complex and integrated functions of the human nervous system involving precisely coordinated interactions between voluntary and involuntary neural mechanisms. While the fundamental aspects of voice production are primarily controlled by the somatic nervous system (SNS) the ANS plays a crucial and often underappreciated role in modulating voice characteristics through various physiological pathways.

AUTONOMIC NERVOUS SYSTEM

The production of voice relies on a sophisticated neural network that integrates multiple systems. At its core, the vagus nerve, the tenth cranial nerve as part of the ANS.

Respiratory Control

Through its control of the diaphragm and intercostal muscles, the ANS modulates breath support, which is crucial for sustained phonation. The vagus nerve plays a central role in coordinating respiratory patterns with phonation, ensuring consistent airflow for speech and singing.

Parasympathetic dominance promotes deep, diaphragmatic breathing, supporting sustained and controlled vocalization and sympathetic activation can lead to shallow, rapid breathing, potentially disrupting vocal stability. Breathing patterns provide the necessary pressure to vibrate the vocal folds and have influence on speech and singing, also being crucial for maintaining pitch and volume.

Laryngeal Function

The vocal folds in the larynx vibrate as air passes through them to produce sound. Their tension and position are controlled by two vagus nerve branches: the recurrent laryngeal nerve and the superior laryngeal nerve. Parasympathetic input regulates mucus secretion and blood flow in the larynx, while sympathetic activation affects muscle tension, which can lead to a strained or higher-pitched voice.

Auditory-Vocal Integration

The middle ear muscles, influenced by vagal regulation, play a crucial role in auditory processing and vocal feedback. This system helps modulate sensitivity to self-generated sounds and prevents vocal feedback distortion. The integration of auditory and vocal systems is essential for maintaining appropriate vocal intensity and pitch. Dysregulation of the autonomic nervous system (ANS) can significantly impact the function of the middle ear muscles, particularly the tensor tympani and stapedius, which are crucial for maintaining the proper tension of the eardrum (tympanic membrane). These muscles help regulate the eardrum's vibrations, ensuring it responds appropriately to sound waves. When the ANS is dysregulated, this delicate balance is disrupted, leading to several changes in the eardrum's structure and function.

The eardrum may lose its optimal tension, becoming either too loose or too rigid, which impairs its ability to vibrate effectively in response to incoming sound waves. This can reduce sensitivity to subtle frequencies, particularly those crucial for understanding human speech and hearing one's own voice. Furthermore, altered vibration patterns in the eardrum can distort auditory feedback, making it difficult to differentiate between self-generated and external sounds. These disruptions hinder the integration of auditory and vocal systems, which is essential for tasks like speech modulation and singing, where accurate perception of one's own voice is critical for maintaining pitch and intensity.

2.4 Specific Voice Parameters as Autonomic Indicators

The voice serves as both, a mirror of our internal state and a tool for social engagement, making it a unique window into autonomic functioning.

RESPIRATORY PATTERNS

Breathing patterns play a key role in vocal production and are an indication of autonomic states. Sympathetic activation for example leads to shallow and rapid breathing while parasympathetic dominance allows for deeper and slower breaths. Effective breath support is crucial for sustaining the voice and ensuring its quality. Respiratory patterns also impact subglottal pressure, which in turn interacts with phonation to determine voice quality.

PHONATION CHARACTERISTICS

Voice quality parameters serve as reliable markers for autonomic state. Pitch variation, for instance, is a direct reflection of the level of autonomic arousal. The tension within the larynx also influences the vibration patterns of the vocal folds. Increased stress can alter voice quality and the harmonic structure of the voice changes in response to shifts in autonomic state. Additionally, subglottal pressure plays a significant role in regulating vocal intensity.

ARTICULATION AND RESONANCE

The clarity of speech is heavily influenced by the tension and coordination of muscles involved in articulation. Tension in the facial and oral muscles can impact the precision of articulation while the overall muscle state affects resonance characteristics. Stress further disrupts the coordination of articulatory movements, leading to variations in vocal tract configuration and resonance. Jaw tension also affects the overall quality of the voice.

PROSODIC FEATURES

Prosodic features including speech rate, volume and pitch variability, offer valuable insights into an individual's autonomic state. A faster speech rate is often associated with higher arousal while volume modulation can indicate emotional changes. Variations in pitch reflect the flexibility of the response while rhythm patterns provide clues about self-regulation. Intonation patterns are particularly revealing in showing emotional expression.

2.5 Vocal Expressions of Nervous System State

Vocal expressions are closely linked to the state of the nervous system with different autonomic states influencing voice characteristics and emotional expression.

VENTRAL VAGAL STATE

In the Ventral Vagal State the voice is marked by warm, resonant tones and a natural melodic quality. Acoustic properties include a balanced harmonic spectrum, rich timbre and varied pitch (approximately 85–255 Hz, depending on the individual). Prosody is dynamic with smooth transitions between syllables and natural rhythm, reflecting a sense of engagement and calm. Harmonics are well-defined, contributing to the full and resonant sound of the voice. This state fosters optimal vocalization with clear articulation and controlled breath support from deep diaphragmatic breathing. The relaxed larynx and high vagal tone ensure smooth, controlled vocal fold function, enabling expressive, resonant speech that conveys emotions such as joy, love,

curiosity and calm. The volume remains moderate, neither too loud nor too soft, conveying calm assertiveness.

SYMPATHETIC STATE

The two sympathetic states share similarities in their high-energy soundscapes mobilizing for activation of the sympathetic nervous system. However they differ in their emotional tone and the nuances of their sonic expressions.

FIGHT RESPONSE

The voice exhibits loud, sharp and intense tones with strained articulation and increased muscle tension. Acoustic properties include heightened subglottal pressure, a narrow harmonic spectrum and irregular prosody with sharp increases in pitch and volume. Frequencies tend to shift higher (often exceeding 300 Hz) and timbre becomes harsher due to vocal strain. Speech patterns become rapid and irregular, reflecting heightened arousal and emotions such as anger and frustration.

Breathing is shallow and irregular, contributing to vocal tension and instability. The voice in this state is loud, forceful and commanding with strong consonant attacks and sharp vowel onsets that convey dominance.

Flight Response

The voice tends to be high-pitched, breathy and rapid, with unclear articulation and irregular rhythm often conveying panic or desperation. Acoustic properties include reduced harmonic richness, weaker timbre and trembling or quivering due to irregular breath control. Frequencies may fluctuate rapidly and prosody becomes uneven, reflecting fear, anxiety or restlessness. Both fight and flight responses involve shallow, rapid breathing, leading to decreased vocal stability and a strained or tremulous quality.

DORSAL VAGAL STATE

In the Dorsal Vagal State vocal qualities shift to low-pitched, monotone and hollow tones with minimal prosody and volume. Frequencies are lower (typically 60–100 Hz) with dampened

harmonics, resulting in a muffled or strained quality. Timbre becomes flat and lifeless, reflecting limited emotional expression. This state often reflects feelings of numbness, sadness, hopelessness and apathy with speech patterns slowing and becoming monotonous due to low energy and diminished engagement. Reduced respiratory support and decreased vagal tone further diminish vocal resonance, leading to a quiet, strained and energy-deprived vocalization.

Nervous System State	Tone	Pitch	Rhythm/Prosody	Breathing	Articulation/Resonance
Ventral Vagal	Warm, resonant, inviting	Dynamic, natural range	Balanced, flowing, melodic	Deep, diaphragmatic, steady	Clear articulation, rich harmonic spectrum, smooth transitions, varied resonance
Sympathetic (Fight)	Strained, sharp, forceful	High-pitched (>300 Hz)	Irregular, sharp pitch/volume shifts	Shallow, rapid, chest-dominant	Tense articulation, narrow harmonic range, strained resonance, forceful consonant sounds
Sympathetic (Flight)	High-pitched, breathy	Fluctuating, unstable	Quick, irregular, chaotic	Shallow, erratic, rapid	Weak articulation, trembling resonance, light or fragmented sounds
Dorsal Vagal	Low, monotone, hollow	Low-pitched (<100 Hz)	Minimal, flat, slow, lacking variety	Slow, shallow or held breath	Weak articulation, muffled or dampened resonance, flat timbre

3. Trauma and the Nervous System

3.1 The Impact on Vocal Expression

Gabor Mate says “Trauma is not what happens to you. It’s what happens inside you as a result of what happens to you.” Trauma profoundly disrupts the autonomic nervous system, leaving individuals stuck in patterns of hyperarousal (fight/flight) or hypoarousal (shutdown). These states not only affect emotional and physical well-being but also compromise vocal access. According to Peter Levine’s Somatic Experiencing framework, trauma is stored in the body when an individual is unable to complete a self-protective response, leading to nervous system dysregulation.

This dysregulation manifests in the voice in several ways. When stuck in a hyperaroused state, individuals may experience vocal tension, strained phonation or a high-pitched, breathless quality

due to shallow breathing. Conversely, those in a hypoaroused state may struggle with vocal suppression, a monotone or weak voice or a complete loss of vocal function. Research by Bessel van der Kolk supports this, demonstrating that trauma alters breath patterns, muscle tension and the neural pathways involved in vocal production.

Trauma-informed vocal practices provide a pathway for healing by acknowledging the body's physiological responses and working with them rather than against them. By engaging in structured vocal exercises, individuals can gradually re-establish a connection with their voice, moving from dysregulation to balance

Trauma-informed vocal practices aim to create a safe and supportive space for individuals to rebuild trust with their voices. The voice, as noted by Austin (2008), often becomes "inaudible, tight and tense, breathy and undefined or simply untrue" in response to traumatic experiences (p. 45). This suppression of authentic vocal expression not only affects communication but also indicates deeper neurophysiological patterns of dysregulation. The relationship between voice and trauma operates bidirectionally: trauma affects vocal expression, while vocal practices can facilitate healing. This understanding necessitates a deeper exploration of how safety and vocal expression intertwine in sound healing settings.

3.2 The Importance of Safety

Safety is a prerequisite for free and authentic vocal expression. According to Polyvagal Theory, when we feel safe, we are in the ventral vagal state—a state of calm and connection. As Porges (2017) explains, "Neural circuits distinguish whether situations or people are safe, dangerous or life-threatening and, in turn, regulate our body states" (p. 19). In this state, we can access our voice fully and freely, enabling us to communicate, play and express emotions. This is the biological basis of feeling "safe enough" to explore, create and engage socially. The voice becomes an expressive

and playful tool, enabling singing, laughter and emotional release. In contrast, when safety is compromised, the nervous system triggers protective responses that limit vocal access.

The voice plays a dual role in trauma recovery—it both signals safety and reinforces it. Porges (2011) emphasizes that "the tone, rhythm and quality of the voice can communicate cues of safety, activating the ventral vagal system in ourselves and others" (p. 142).

Restoring a sense of safety is essential for individuals who struggle with vocal suppression due to trauma. Sound healing, breathwork and gentle vocal exercises can serve as tools to signal safety to the nervous system. Research highlights the importance of warm, resonant vocal tones and co-regulation—engaging in vocal practices with a supportive guide or group—to create an environment where individuals feel secure enough to explore their voice.

The incorporation of safety-oriented practices in sound healing offers significant opportunities for enhancing therapeutic outcomes while prioritizing client well-being. Key principles such as Cues of Safety—using warm tones, soft lighting and slow, gentle rhythms—help create a calming and supportive environment. By fostering Co-Regulation, where practitioners and clients engage in shared activities like vocal exercises or guided breathing, a sense of connection and mutual trust is established. Ensuring Predictability through gradual changes in tone and rhythm further promotes a stable therapeutic space, reducing the likelihood of overwhelm. Empowering clients by offering Choices and obtaining their Consent enhances their sense of agency and comfort, while Informing them about the processes and potential effects of sound healing builds trust and transparency in the therapeutic relationship.

Practical strategies for cultivating vocal safety include the use of low, rhythmic tones such as humming to stimulate the vagus nerve and signal relaxation. Another way is by engaging in slow, deep breathing to regulate the nervous system and support vocal stability. As well as encouraging playful, exploratory vocalizations to rebuild confidence in self-expression.

4. Vocal Exercises for Nervous System Regulation

4.1 Exploring the Nervous System States Through the Voice

THE VENTRAL VAGAL STATE

In the Ventral Vagal State the vocal properties are warm, resonant and inviting, promoting safety and connection. Gentle humming, such as “mmm,” creates body resonance, transitioning into soft vowel-based tones like “ahhh” or “oooh.” Simple melodic patterns with ascending and descending phrases convey balance, while slow, flowing rhythms align with deep, relaxed breathing.

Major and minor keys, complex rhythms or simple toning, loud or soft can be used depending on where one like to journey into.

THE SYMPATHETIC STATES

THE FIGHT STATE

To address this state, it is important to determine whether the individual needs to release this energy first or is ready to de-escalate directly.

Fight is typically characterized by strong, sharp and powerful tones that evoke grounded energy and tension. Vocal techniques include percussive sounds like “HA!” or “TA!” with sharp articulation and rhythmic growls or guttural tones for added intensity. Energy builds through quick, driving rhythms that mimic tension, such as “TA-ta-ta-TA!”. Vocalizations such as primal growls, roars or loud open vowels like “AHHH!” can promote the release of energy. Techniques should focus on fast tempos and high intensity to match the fight energy, gradually slowing the rhythm and softening dynamics over time. A call-and-response pattern can help structure this process, inviting engagement while maintaining control. The dynamic arc of this approach starts with high-energy, intense sounds and transitions toward softer, slower tones as the energy dissipates.

Once the energy is being released emphasize on grounding and calming sounds. Gentle vocal techniques such as low humming or steady vowel sounds like “Om” can promote relaxation.

Simple, repetitive chants (e.g., “I am safe”) reinforce a sense of security.

Techniques should mirror a racing heart with rhythmic pacing that gradually slows to a resting rate.

Grounding sounds like steady beats or low drones anchor the body, while dynamic shifts are smooth and gradual to maintain the calming effect.

THE FLIGHT STATE

Unlike the fight state, the sounds here are less forceful and more agile, reflecting the need to flee rather than confront. The goal is to anchor scattered energy while progressively easing tension.

High-pitched, airy tones reflect the scattered and upward-moving energy of this state. Clients can use fast, breathy vocalizations like “Hah-hah-hah” or “Shh-shh-shh,” adding light trills or fluttering tones to mimic movement or escape. Quick, irregular rhythms and ascending vocal patterns create a sense of urgency, gradually tapering off into slower, descending sounds to ease the scattered energy.

The dynamic curve begins with chaotic rhythms or fragmented melodies and gradually introduces structure and predictability, settling the nervous system.

Once energy is being released start sounding soothing, slow, descending vocal tones or scales, such as “Ooooooh” or “Hooo,” mimic the sensation of settling. Guided breath-focused chants can further synchronize vocalization with relaxed breathing. Repetition and predictable patterns enhance safety and reduce anxiety. Starting with soft, light tones and gradually extending phrases encourages deeper relaxation.

THE DORSAL VAGAL STATE

The Dorsal Vagal State soundscape can be represented through sounds that are muted, low and resonate with a sense of emptiness and requires a delicate balance of gentle activation and grounding. The goal in this state to reintroduce connection and vitality without overwhelming the system.

A gentle way of introducing energy back into the system is through silent sounding, engaging the imagination of sounds or sounding. Progressively one can introduce more activation through gentle vocalizations like monotone humming or rhythmic breathing sounds, such as whispering “Haaa” offering a safe, non-invasive way to engage. Call-and-response or guided sound-making (e.g., “Hum with me”) can encourage engagement while maintaining a sense of safety. The dynamic curve begins with long, low tones, gradually introducing brighter ones while maintaining a low-to-moderate intensity to avoid sudden shifts using very slow and minimal rhythms, gently adding more variations and introducing energy back into the system.

GENERAL PRINCIPLES FOR ALL STATES

Regardless of the specific nervous system state, there are several overarching principles that can enhance the effectiveness of sound-based interventions. Matching sounds to an individual’s breathing pattern can guide them toward deeper, slower breaths. Rhythmic vocalizations or tones help synchronize this process. Incorporating tactile instruments, such as placing a singing bowl near the body or encouraging participants to engage with shakers, can enhance grounding. Observing an individual’s breathing, posture and level of engagement provides important cues for determining whether they need energy release or immediate calm.

By attuning to these physiological and emotional states, sound healing practitioners can create a therapeutic environment that promotes safety, connection and well-being. The careful use of sound and voice offers a powerful pathway to restore balance and foster healing in the nervous system.

4.2 Exercise 1: Partial Exploration of Vocal Access through Nervous System States

Begin by accessing the ventral vagal state of safety through gentle, resonant vocalizations (e.g., “mmm” or “ahhh”) to establish a baseline of calm and connection. Gradually explore how your voice changes when reflecting the fight, flight or dorsal vagal states by vocalizing sharp sounds

("HA!"), breathy tones ("Hah-hah") or low, monotone humming. End the exercise by returning to the ventral vagal state with soothing, rhythmic tones to restore safety and grounding. To explore the individual states of the ANS start by connecting to the ventral vagal state of safety, toning in its vocal properties previously described. From there start exploring one of the states (fight, flight or dorsal) in a gentle and gradual way by making the sounds and voice of the state. After fulfilled with the exploration returning back to ventral vagal state to finish and ground.

4.3 Exercise 2: A Full Vocal Journey Through the Nervous System States

Guide your client through the autonomic nervous system states, starting in the ventral vagal state with warm, resonant tones. Progress through vocalizations that reflect the fight state (e.g., sharp and percussive sounds), the flight state (e.g., light and quick tones) and the dorsal vagal state (e.g., soft, low humming). Then reverse the sequence, gradually transitioning back to the ventral vagal state. This practice helps build awareness of how nervous system states influence vocal access while fostering resilience and safety. It's essential to maintain a pace and intensity that aligns with the participant's nervous system, ensuring a sense of safety throughout.

4.4 Exercise 3: Discovering the Sounds of Your Nervous System

Explore the connection between your nervous system and your voice by vocalizing the qualities of each state. Start with the ventral vagal state, producing warm, resonant sounds that feel safe and grounded. Allow yourself to intuitively create the sounds that match the fight, flight or dorsal vagal states, trusting that your body knows what feels authentic. This exercise fosters a deeper understanding of how your nervous system influences vocal expression. Encourage clients to make the Sound of their nervous system states. Guiding them into feeling the qualities of the ventral vagal in their bodies and allowing for their body to make the sound of this state, trusting that whatever sound comes is the right one. In this way one could explore all the different states, becoming familiar with their nervous system.

4.5 Exercise 4: A Journey Through the Sounds of the Nervous System States

Based on Exercise 3 one could encourage clients to come up with a sequence for each state of their nervous system. From here the sound healer could encourage a playful exploration back and forth between nervous system states („pendulation“), inviting clients to become familiar and empowered to shift back and forth between nervous system states. This builds trust and helps increasing resilience in the system.

5. Future Outlook on Voice and Nervous System Regulation

5.1 The Human Voice as Biofeedback Tool

One exciting development in this field is the use of the human voice as a biofeedback tool. The voice, closely linked to the autonomic nervous system, reflects physiological states such as stress or relaxation. Advances in biofeedback technology have made it possible to analyze these vocal characteristics in real time, offering insights into an individual’s stress levels or relaxation states. This approach allows clients to monitor and regulate their emotional and physiological states, offering an empowering and intuitive path to well-being. Vocal biofeedback systems are increasingly being explored for their potential in enhancing emotional regulation, stress management and overall mental health.

5.2 Broader Implications of Findings

The insights from voice-based therapy and its connection to the autonomic nervous system extend beyond therapeutic settings. In education, these findings could inform strategies to help students manage stress and improve focus through vocal exercises and breathing techniques. Teachers could use these methods to create calmer, more engaging classroom environments.

In community work, vocal practices could foster group cohesion and emotional well-being by facilitating shared activities like group singing or chanting, which promote a sense of safety and connection.

On a personal level, understanding how voice reflects emotional states could improve communication in relationships. Partners, families or friends might better navigate conflicts or deepen connections by recognizing and responding to each other's vocal cues. These applications highlight the broader potential of using the voice as a tool for enhancing well-being and connection in various contexts.

5.3 Limitations and Future Research

Despite its potential, voice-based therapy faces several challenges that need to be addressed. Accessibility remains a significant barrier, as vocal therapy and biofeedback tools can be costly and are often unavailable in underserved areas. Additionally, the lack of standardized guidelines for vocal exercises makes it difficult to ensure consistent therapeutic outcomes across different practitioners and settings. Research gaps also exist, particularly regarding the long-term efficacy of these approaches and their applicability to diverse populations. Furthermore, ethical and technological barriers, such as data privacy concerns and the need for accurate algorithms in biofeedback tools, present additional challenges. Future research should focus on improving affordability, establishing standardized protocols and expanding studies to include broader populations while addressing privacy and technological issues to fully realize the potential of voice-based therapy.

6. Conclusion

The difficulty in accessing one's voice is not merely a mechanical or technical issue; it is deeply connected to the nervous system's response to trauma and safety. When individuals experience

nervous system dysregulation due to past trauma, their ability to vocalize freely becomes compromised. Understanding this connection allows for a more compassionate and effective approach to voice work, one that integrates trauma-informed care and nervous system regulation strategies.

By fostering safety through intentional vocal practices, individuals can regain access to their voice, using it not only as a means of communication but also as a tool for healing and self-empowerment.

Future research and therapeutic approaches should continue exploring the intersection of voice, trauma recovery and nervous system health, ensuring that more people have the opportunity to reclaim their authentic vocal expression.

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