Vocal Function and Modification for the Transgender Vocal Performer: The Science Behind the Art

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Topics of Discussion

- Voice Basics: Review
  - Anatomy and Physiology

- Approaches to voice modification for feminization/masculinization

- Voice therapy process/protocol

Erin Donahue, CCC-SLP – One Voice Festival 2018
Anatomy & Physiology of Voice
VOICE BASICS:
Subsystems of Vocal Production

Resonance
Phonation
Respiration
Respiration

Power Source for Phonation
Phonation:
LARYNX
Phonation:
VOCAL FOLDS

- AKA Vocal Cords
- Smooth & Straight Edges
- Pearly White Color
- Flexible
- Moisturized
Differences in Laryngeal Anatomy

- **Length of Vocal Folds**
  - Average (AMAB - Male) VFs between 1.75-2.5 cm in length
  - Average (AFAB - Female) VFs between 1.25-1.75 cm in length
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Feminine, 220 Hz

Gender-ambiguous, 155 - 187 Hz

Masculine, 120 Hz

Vocal Fold Visualization: Laryngeal Videostroboscopy
Resonance: VOCAL TRACT

Vocal Tract
- Size/Shape Differences
Typical Voice Characteristics in Masculine vs. Feminine Voices

- **Speaking Pitch**
  - Male: 85-170 Hz (E/F2 - E/F3)
  - Female: 170-250 Hz (E/F3 – B3/C4)
  - “Gender Neutral/Ambiguous”: 145-185 Hz (D#3-G3)

- Resonance
- Inflection/Prosody
- Articulation
- Language
- Non-Verbal Communication
Vocal Hygiene Overview

*Important for EVERY Vocal Performer!!*

- Hydration
  - Guidelines for Internal Hydration
- Vocal Pacing
  - Vocal Naps
  - Avoid Overuse
- Avoidance of Vocal Abuses (Phonotrauma)
  - Vocal Extremes (Intensity)
  - Excessive Clearing/Coughing
- Avoidance of Irritants
  - Environmental (Smoke), Internal (Reflux)
- Warm-up/Cool-down
- Train like an Athlete
Voice Modification
Voice Modification Options

- None
- Direct Voice Therapy
  - Feminization or Masculinization
- Independent
  - Trial and Error, Mimicking Voice Models, etc.
  - Youtube, Apps, Peers, etc.
- Surgical
  - Pending trial of direct voice therapy
  - Multiple options with varying degrees of success/satisfaction
- Medical Management
  - HRT for masculinization
Hormone Replacement Therapy (HRT): Masculinization

- Lowered pitch
  - often \textit{(not always)} approximately one octave
  - increased vocal fold mass

- Resonance change
  - maxillary and mandibular growth and lowered larynx

Goals, targets, and therapy approaches/exercises in voice masculinization often differ when patient is on HRT due to these changes
Red Flags: Symptoms

- Vocal Symptoms
  - Vocal fatigue
  - Prolonged hoarseness
  - Effortful phonation
  - Change in vocal quality or range
  - Decreased vocal flexibility/agility
  - Breaks, fuzziness, breathiness, holes, loss of range, loss of dynamic control

- Change in Sensation
  - Neck tightness, discomfort, aching (muscular)
  - Globus Sensation (lump in the throat feeling)
  - Throat Pain (at rest or task-specific)

- Other
  - Burning or bitter taste/raw throat
  - Throat dryness
  - Chronic throat clearing or non-productive coughing
What to do if you think you have a voice problem

- Review vocal health and hygiene
- Pinpoint onset of problem and be able to describe
- Have a list of current and upcoming vocal demands
- Don’t wait, seek help! Do not wait until crisis point!
  - Voice Care Team
    - Voice/Music Teachers
    - Ear, Nose, Throat Doctor (ENT)
    - Voice Pathologist/Singing Voice Specialist
Voice Modification Therapy for Voice Feminization and/or Masculinization
Voice Therapy for Voice Modification
Research and History

- Research began in the 1970’s
  - Ongoing research published in multiple disciplines and journals
- World Professional Association for Transgender Health
  - www.wpath.org
  - Anita Kozan’s Chapter – Trans Singing Voice
Voice Therapy

A non-medical, non-surgical approach for individuals who wish to rehabilitate or modify their voice in a safe, efficient, and healthy way in order to facilitate a desired vocal outcome and provide vocal longevity.
The goal of transgender voice therapy is to aid the individual in modifying their voice in a safe and healthy manner that will facilitate that individual’s desired vocal outcome and provide vocal longevity.
Benefits of Voice Modification Therapy

- Individualized Program
  - Structured exercises
  - Targeted towards individuals abilities and goals
- Knowledgeable Instructor
  - Ensure healthy vocal techniques
  - External immediate feedback and reinforcement
  - Specific and consistent language and instruction

*Sound Familiar?*
BBIVAR/ProVoice Center Protocol

- Initial Evaluation
  - Written and Verbal History (medical, personal, vocal)
  - Self-Assessment Measures
  - Laryngeal Videostroboscopic examination
- Start Voice Therapy
  - Acoustic and Aerodynamic Measures
  - Begin Voice Therapy Exercises
- Subsequent Voice Therapy Sessions
Aspects of Voice Addressed in Therapy

- Pitch
- Resonance
- Intonation/Prosody
- Articulation
- Language
- Non-Verbal Communication
- Carryover into functional, every day voice use

- Any Specific Voice-Related Symptoms/Complaints
Voice Therapy Delivery Models/Options

- **INDIVIDUAL THERAPY**
  - One on one
  - Individualized
  - No set time frame or goals

- **GROUP THERAPY**
  - Support of others
  - Feedback from peers
  - Functional practice
Potential Goals in Voice Masculinization Therapy

- Vocal Hygiene
- Potentially Less Focus on Pitch
  - Resonance
  - Intonation/Prosody
  - Non-Verbal Communication
  - Language
  - Carryover into functional, every day voice use
- Addressing Symptoms
  - Throat Pain/Discomfort
  - Vocal Fatigue
  - Hoarseness
Singers

- Benefits for voice modification therapy
  - Trained ears – pitch matching, pitch identification/discrimination
  - Control over voice – increased ability to make adjustments on command
  - Vocal flexibility, agility, strength, stamina
  - Jargon/Vocabulary
  - “Schema” for voice production
  - Self-awareness
Voice Modification Therapy

• Vocal Hygiene Recommendations
  • Hydration
  • Elimination of any phonotraumatic behaviors
  • Other relevant recommendations related to voice/throat
    • Lifestyle factors, exposure to irritants, smoking, clearing/coughing, management of illnesses, etc.

• Elimination of Muscle Tension
  • Deactivation stretching
  • Progressive Relaxation

• Respiration
  • Efficient breathing
    • Diaphragmatic breathing exercises
Voice Modification Therapy

• Pitch
  • Determine goal/target pitch
    • Short term vs. Long term pitch goals
    • Pitch raising/Lowering
      • Modified Vocal Function Exercises
      • Semi-Occluded Vocal Tract Techniques
  • Pitch Range
• Resonance
  • Efficient voice through target resonance
    • Resonant Voice Therapy Exercises
• Articulation
• Prosody/Intonation
• Language
• Non-Verbal Communication
Voice Modification Therapy

- Articulation
- Prosody/Intonation
- Language
- Non-Verbal Communication
Singing Voice

- Vocal Exercises
  - Warm-up Regimen
    - Stretching and contracting
  - Conditioning Exercises/Vocalise
    - Pitch Range/Flexibility
    - Strength
    - Agility
    - Stamina
  - Cool-down Regimen
Questions?

Thank you!
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