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# **ON VOICE DYSPHORIA**

## **Placing the transgender and gender diverse client at the centre of gender-affirming voice training**

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### **Akademisk avhandling**

som med vederbörligt tillstånd av Rektor vid Umeå universitet för avläggande av  
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Avhandlingen kommer att försvaras på engelska.

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On voice dysphoria – Placing the transgender and gender-diverse client at the centre of gender-affirming voice training

**Abstract**

**Introduction:** Gender dysphoria describes the stress and discomfort that transgender and gender diverse (TGD) people may experience when their gender identity is not aligned with their birth-assigned sex. A mismatch between voice and gender identity, voice dysphoria, can be a prominent part of gender dysphoria and may lead to limited participation in social life. Gender-affirming voice training provided by speech and language pathologists (SLPs) aims to assist TGD voice clients to reach their preferred gender expression in voice. The training is mainly based on research on voice and speech features most influential for the perception of femininity and masculinity in cisgender naive listeners, that is, people whose gender identity aligns with their birth-assigned sex and who have no professional training in voice assessments. The overall purpose of this thesis was to adopt a client-centred perspective by focusing on TGD people's perception of voices and voice modification.

**Method:** To increase the understanding of TGD people's motives and perceived barriers to voice modification, semi-structured interviews were conducted with 15 TGD voice clients considering gender-affirming voice training (Study I). To explore TGD people's perceptions of voices in relation to cisgender naive listeners and SLPs, a listening experiment was constructed in which 132 voices representing a variety of gender expressions were rated according to the degree of femininity and masculinity, respectively. (Study II). The listener ratings were combined with a comprehensive set of acoustic voice and speech features using a penalized regression model to identify the relative strength of acoustic features most salient for listeners' perception of femininity and masculinity in voice (Study IV). A rating protocol for standardised auditory-perceptual assessment of voice and speech features influencing the perception of gender expression in voice was developed and evaluated regarding consistency and agreement in six SLP listeners (Study III).

**Results:** Study I: The interviews showed that the TGD voice clients' expected gains of modifying the voice included increased well-being, participation in social life, and control over the voice. Anticipated barriers included fears of not reaching one's set goals and that the modified voice would no longer be an efficient tool for communication. Study II: The results of the listening experiment indicated that while TGD and cisgender naive listeners did not differ in their perceptions of femininity and masculinity, SLPs rated the voices as less feminine, and less masculine compared to the other two groups. Study IV: The acoustic models that best predicted the listener ratings explained 89% and 86% of the variance of the rated femininity and masculinity in voices, respectively. While fundamental frequency was seen to be the single most influential acoustic feature, the results verified the co-contribution of 222 other acoustic properties of articulation, intonation and resonance. Study III: The evaluation of the auditory-perceptual rating protocol provided support for structured clinical ratings within gender-affirming voice training to be meaningful. The protocol items were rated overall in a consistent manner by the SLPs, but the level of agreement among SLPs was lower.

**Conclusions:** The project places the TGD voice client in focus, taking a stance on the importance of applying a client-centred approach in both voice training and research. The results showed the need to address motivational and constraining factors for voice modification as these may affect TGD clients' adherence to voice training and their satisfaction with training results. SLPs should be attentive to how their professional training may influence their perception of voices and encourage explorations of the TGD voice client's perceptions of femininity and masculinity to ensure that goal setting and evaluation of training outcomes reflect the perceptions of the client. The voice training should consider the combined influence of pitch, intonation, resonance and articulation to target the client's preferred gender expression in voice, measures which are also possible to analyse acoustically. To promote consensus among SLPs when performing auditory-perceptual assessments of these voice and speech aspects, joint listener training is recommended on a regular basis.

**Keywords**

Voice dysphoria, Transgender, Gender diverse, Gender-affirming, Voice training, Intonation, Resonance, Articulation, Speech and Language Pathology, Auditory-perceptual, Acoustic, Client-centred

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