Vocal Qualities in Music Theater Voice: Perceptions of Expert Pedagogues

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Summary: Objectives/Hypothesis. To gather qualitative descriptions of music theater vocal qualities including belt, legit, and mix from expert pedagogues to better define this voice type.
Study Design. This is a prospective, semistructured interview.
Methods. Twelve expert teachers from United States, United Kingdom, Asia, and Australia were interviewed by Skype and asked to identify characteristics of music theater vocal qualities including vocal production, physiology, esthetics, pitch range, and pedagogical techniques. Responses were compared with published studies on music theater voice.
Results. Belt and legit were generally described as distinct sounds with differing physiological and technical requirements. Teachers were concerned that belt should be taught "safely" to minimize vocal health risks. There was consensus between teachers and published research on the physiology of the glottis and vocal tract; however, teachers were not in agreement about breathing techniques. Neither were teachers in agreement about the meaning of "mix." Most participants described belt as heavily weighted, thick folds, thyroarytenoid-dominant, or chest register; however, there was no consensus on an appropriate term. Belt substyles were named and generally categorized by weightedness or tone color. Descriptions of male belt were less clear than for female belt.
Conclusions. This survey provides an overview of expert pedagogical perspectives on the characteristics of belt, legit, and mix qualities in the music theater voice. Although teacher responses are generally in agreement with published research, there are still many controversial issues and gaps in knowledge and understanding of this vocal technique. Breathing techniques, vocal range, mix, male belt, and vocal registers require continuing investigation so that we can learn more about efficient and healthy vocal function in music theater singing.
Key Words: Music theater–Voice–Pedagogy–Belt–Legit–Mix.

INTRODUCTION

Music theater is a relatively new performance genre that developed out of opera and popular entertainment in the late 19th and early 20th centuries. Until relatively recently, aspiring music theater singers were trained in classical vocal techniques because contemporary vocal qualities were considered to be unattractive and dangerous.[1–3] However, the prevalence of rock, pop, and contemporary music theater in the latter decades of the 20th century led singers and teachers to develop vocal training techniques that met the specific demands of these genres. In the same period, Jo Estill and other voice researchers argued that contemporary sounds such as belt and mix were valid in their own right and not inherently detrimental to the vocal health of the singer.[4,5] More recently, research into Contemporary Classical Music (CCM) has grown significantly differentiating contemporary and classical modes of vocal production.[6–21]

Contemporary music theater comprises a diverse range of musical influences, from classical to contemporary, and professional singers are expected to be competent in all styles.[22,23] Terms such as belt, legit, and mix are now commonplace in the professional music theater industry, and the demand for appropriate and flexible training that covers these vocal styles is growing.[24] The performance requirements of music theater singing are highly taxing, physically and vocally. Consequently, many singers and pedagogues are concerned about the inherent health risks of music theater singing styles such as belt.[25] More information is needed about how these vocal qualities are produced so that singers can be taught efficiently and safely to a professional standard.

Current physiological and acoustic research

Typically, music theater vocal qualities are described as belt, legit, and mix by singers, teachers, casting agents, and musical directors.[22,26,27] The belt sound is commonly produced in contemporary repertoire.[28,29] In the music theater context, belt was originally associated with singers such as Ethel Merman and Celeste Holm and later by Liza Minelli and Patti Lupone among others. Belt is often required in auditions for professional Broadway productions.[22,30] It has been described as "bright," "ringy," "loud," "forward," "speech-like," and as a "yell."[1,3,4,28,30,31] However, other experts have suggested that belt need not be loud and that it does not have a yell quality.[30,32,33] A review of teachers by Miles and Hollien[34] indicated that nasality is a key perceptual component of the belt sound and that belt does not have vibrato.[4,34] However, LeBorgne et al[30] argued that in a professional context, nasality is optional and that vibrato can improve the perceived beauty of a belt sound. Some teachers suggest that there are a number of different kinds of belt, rather than one homogenous quality.[33,35,36]

Belt production is characterized by a relatively high and forward tongue position,[34,37] a more constricted pharynx, and a higher laryngeal position, as well as a more open mouth shape than for classical vocal production,[4,5,12,15,31,38–40] although

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some singers may produce a belt sound with a relatively low larynx and wide pharyngeal shape.[41] Acoustically, the belt sound demonstrates higher energy in the upper frequencies of the sound spectrum,[42,43] a high first formant frequency ($F1$) compared with classical singing,[12] and in a study of a single female singer, a possible tuning of $F1$ to the second harmonic on some vowels.[7] In studies comparing belt and classical voice production, belt had higher closed quotients (CQs) and a greater degree of subglottal pressure[4,12,44] even in adolescent singers.[20]

The term "legit" is a shortening of the word "legitimate," possibly referring to a perception that this classically based sound is more "correct" than belt. There is only one published peer-reviewed study on this quality.[7] Expert teachers have described the sound quality as produced in the female "head" register with "back" vowels.[26,28,40]

The mix sound has been compared with belt and classical singing in two studies. Sundberg et al[12] found that for the female subject of the study, mix was produced with relatively high levels of energy in the upper frequencies of the spectrum and higher frequencies of $F1$ and $F2$ similar to those for belt. Subglottal pressure and sound pressure levels (SPL) measures were recorded at moderate values for this singer, closer to those of operatic singing. Lovetri et al[41] compared laryngeal and pharyngeal gestures in seven singers, who were asked to produce head, belt, and mix qualities. Contrary to expectations, comparisons of belt and mix indicated that laryngeal height did not change for two subjects and that for four subjects, the larynx actually lowered for belt. In this study, the laryngeal height for mix was found to be at the same height as for head register or higher.

Recently, Bourne and Garnier[21] compared the physiological and acoustic qualities of belt and legit in six professional singers, including two substyles of belt, described as chesty and twangy according to their perceived timbre and sympathetic vibration by singers. In the study, four pitches were recorded at the upper belt range for all singers on two vowels [e] and [ɔ]. In belt production, singers generally tuned the first vocal tract resonance ($R1$) to the second harmonic ($2f_0$) up to C5. (Note that vocal resonances are called formants when they are measured as acoustic peaks in the radiated spectrum. Bourne and Garnier [2012] were able to directly measure the resonance frequencies of the vocal tract using a methodology devised by Epps et al [1997].[45] Consequently, these acoustic peaks are described as vocal resonances.) There were no vocal tract tunings for legit. $R1$ and $R2$ were higher in frequency for belt than for legit. SPL values were higher and the energy of the spectrum >1 kHz was greater for belt than for legit. Higher CQ values were recorded in belt than in legit, as well as a less symmetrical electroglottogram (EGG) waveform for belt. There were no significant differences between twangy belt and chesty belt, except for slightly higher frequencies of $R2$. Mix was measured in three singers, with each singer demonstrating different strategies at the glottis and vocal tract for achieving a blended sound at the register transition.

Although recent research on the music theater voice has improved our understanding of vocal function in this style, there are still many unanswered questions. Few studies compare qualities across a range of singers. Only two studies[7,21] have compared legit voice with other qualities, and only three studies have described the mix voice.[12,21,41]

This study investigates the degree of consensus about appropriate teaching strategies for music theater singers by gathering together the experiences, knowledge, and teaching practice of twelve expert music theater pedagogues. This information will provide a context for further objective studies in this field by identifying issues of relevance to the professional music theater industry, illuminating areas of concern, agreement and disagreement among experts, indicating gaps in knowledge, and suggesting potential areas of future inquiry.

METHOD

This study received ethical approval from the Human Research Ethics Committee of The University of Sydney.

Participants

Twelve international music theater voice pedagogues (five men and seven women) were interviewed; four from Australia, six from the United States of America, one from the United Kingdom, and one from Asia. All taught professional music theater performers (Broadway, West End, Professional Australian Industry) and/or advanced tertiary students. All participants had between 21 and 38 years of teaching experience and had undertaken formal vocal education. Most had completed an undergraduate degree in voice; T3 had completed Masters in voice, T4 had completed a formal degree in piano, T9 completed 1 year of college, and T10 had completed advanced certificates in music training through private institutions (ie, L.Mus.A, T.Mus.A. from the Australian Music Examinations Board). All taught music theater singing and at least one other vocal style. All teachers taught both male and female students; seven teachers had more females, two teachers had equal numbers of male and female students, one teacher had more male students, and the remaining teachers did not respond to the question. Participants' studios were predominantly comprised professional singers or full-time voice students at tertiary institutions. One teacher (T7) primarily taught children from the International to Local Community categories according to Bunch Taxonomy of Singers.[46]

Interview protocol

A semistructured interview was conducted with the twelve participants focusing on perceived differences between classical and music theater vocal production, descriptions of music theater vocal qualities, vocal function, style, and pedagogical approaches to the training of music theater singers. This style of interview was appropriate to the aims of this exploratory study; open-ended comments and discussion from subjects facilitated the collection of a broad range of data relevant to the area of inquiry. Interviews varied from 30 to 90 minutes in duration and were conducted by phone or Skype. Each interview was recorded, transcribed, and returned to participants for checking and approval. Transcripts were coded and analyzed in relation to themes drawn from recent research on music theater voice.

Discussion themes and questions for the interview were drawn from a literature review of published research on the