Can singing teachers trained in a pedagogic method (CVT) reliably identify elements of sung sound examples?

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Introduction

Singing teachers use a huge variety of terms to describe the singing voice based on their personal experience and training, type of genre that they teach and whether they teach using a specific pedagogic method. *Reference: What Descriptors Do Singing Teachers Use to Describe Sound Examples? McGlashan JM, Sayles M, Kjelin H, Sadolin C. Oral Presentation PEVOC 2013. Prague, Czech Republic.*

One such pedagogic method is the Complete Vocal Technique (CVT) which was developed to improve communication between trained CVT teachers and their students. It's particular advantages are that it can be used for teaching any style of music and uses defined terminology to allow the voice to be constructed in any way to produce any sound the singer wishes in a healthy manner.
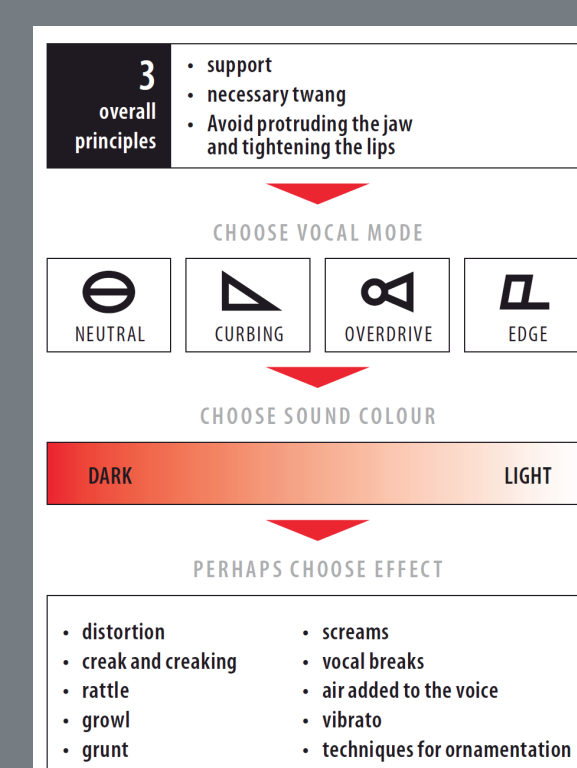
Complete Vocal Technique (CVT)
The technique is underpinned by 4 vocal modes which can be viewed as 'gears of the voice' each with their own rules of production and sound characteristic.

Once the mode is established the sound colour can be varied with dark generally being associated with more classical voice sounds and light with more rhythmical music. Vocal effects such as vibrato or intentional distortion can then be added.

In spite of its widespread use in Northern Europe there has until now been no formal assessment of its application to analyse song samples from different genres of music.

Aim

The aim of this study was to ask trained CVT singing teachers to assess 11 short sound samples of different contemporary and classical song styles and to assess the group rater agreement for the vocal mode, sound colour and vocal effect each sound sample and overall for the test compared to the assessment of an expert panel.

Methods

51 singing teachers with a median of 6.5yrs (range 2-25yrs) teaching experience were asked to listen to 11 short sound samples of different contemporary and classical songs (fig 1). They were asked to write down the words and terms they would use to characterise the singing. If they heard more than one thing they were asked to write it down on a lyric time line clearly indicating the start and finish of the characteristic (fig 2).

fig 1

|	Artist	Track	Lyrics from sound sample
1	Dio	Don't talk to strangers	Don't dream of women cause they only bring you down
2	Linda Ronstad	El Toro Relajo	Torro, torro, toooorro
3	OTEP	Crooked spoons	Smearing sin everywhere, whaaaat
4	Etta James	What do you want me to do	let it roll, yeeeeah, yeeeeah, yeah
5	Whitney Houston	I will always love you	will always love yooou, I'll
6	Cecilia Bartoli	Li biamo ne'lieti calici	il tempo mio giocondo
7	Luciano Pavarotti	La Donna È Mobile	qual pluma al vento, muuta d'acceeeentoo, e do pensierio
8	James Brown	Please, please, please	I love you soo, aaaah baby
9	Sly and family Stone	Family affair	Mom looooves the both of them, you see it's in the blood
10	Kate Bush	Wuthering Heights	Cruel Heathcliff, my one dream, my only master
11	Mariah Carey	Butterfly	When you love someone so deep that they become your life
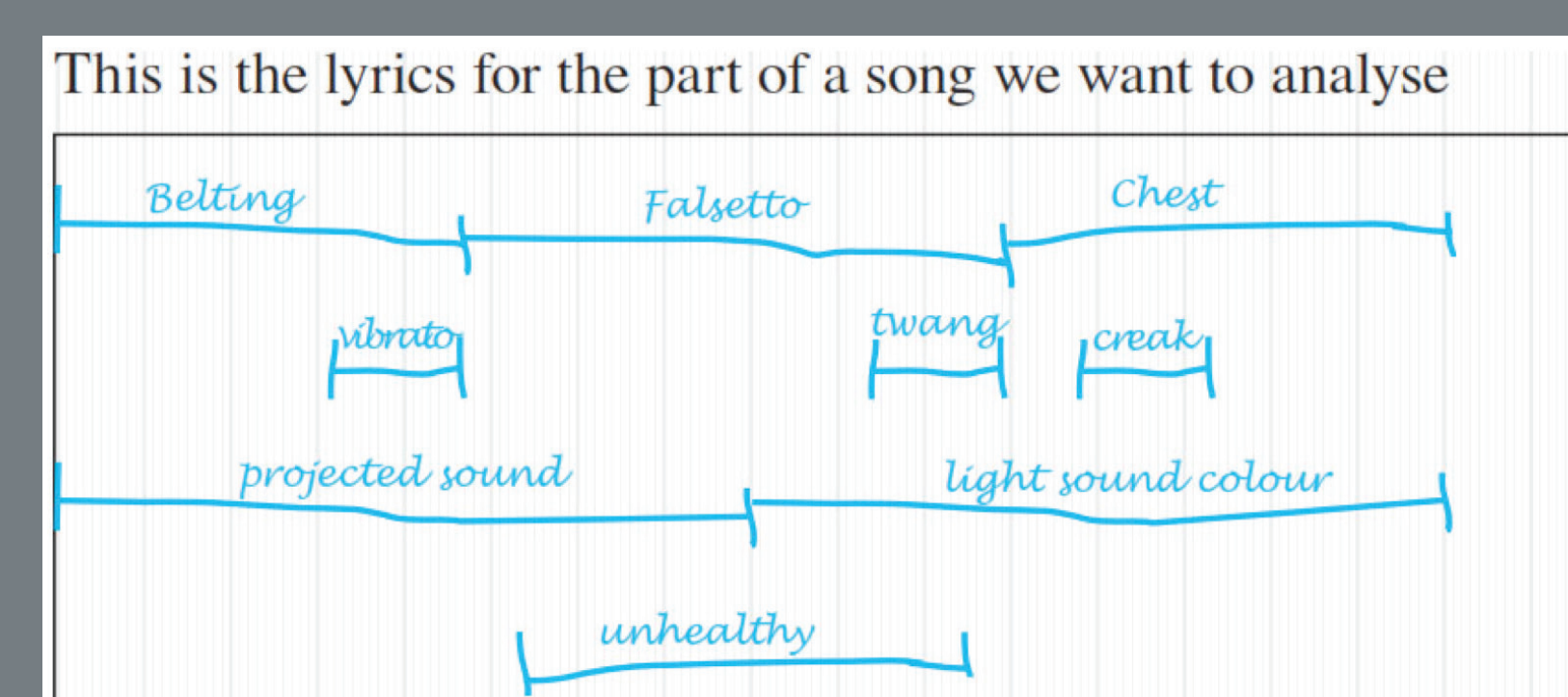
The results for vocal mode, sound colour and vocal effect were compared to those agreed by consensus of an expert panel of CVT teachers.

This is the lyrics for the part of a song we want to analyse

Belting   Falsetto   Chest
vibrato   twang   creak
projected sound   light sound colour
unhealthy

fig 2

Conclusions

- Strict criteria of absolute agreement with the experts was applied even though some participants indicated a sound which may have been partly correct e.g. 'Curb –like' for Curbing.
- Some of the sound examples were short and challenging to the listeners.
- There is a high degree (75%) of agreement between CVT trained teachers in mode recognition across a range of musical genres.
- The results for sound colour agreement were poor partly due to the teachers using the binary options of dark or light sound colour rather than stating when the colour was a medium sound colour as indicated by the experts. In addition it is possible that the sound colour may not always have been recorded if it was a medium level.
- There was also good agreement with the experts when a primary vocal effect (57.8%) was present.
- The results imply that a systematic approach was used by the CVT trained teachers in analysing the voice samples

Results:

Media (range) Percentage agreement of 51 CVT trained singing teachers with Expert panel

Sample	Vocal mode	Sound colour	Effect 1	Effect 2	Effect 3
1	(n=13) 70.6 (31.4-94.1)	(n=13) 0	(n=2) 80.4 (80.4-80.4)	(n=2) 40.2 (39.2-41.2)	-
2	(n=9) 86.3 (13.7-92.2)	(n=9) 0	(n=3) 45.1 (21.6-45.1)	(n=2) 46.1 (37.3-54.9)	-
3	(n=6) 70.6 (29.4-86.3)	(n=6) 0	(n=2) 36.3 (13.7-58.8)	(n=1) 27.5	-
4	(n=7) 56.9 (17.6-92.2)	(n=7) 0	(n=3) 76.5 (74.5-76.5)	-	-
5	(n=8) 79.4 (51-88.2)	(n=3) 0	(n=3) 13.7 (13.7-13.7)	(n=1) 56.9	
6	(n=11) 86.3 (52.9-96.1)	(n=11) 58.8 (19.6-62.7)	(n=11) 56.9 (45.1-66.7)	(n=5) 51 (45.1-60.8)	-
7	(n=16) 53.9 (29.4-86.3)	(n=16) 43.1 (37.3-45.1)	(n=16) 39.2 (29.4-76.5)	(n=2) 18.6 (17.6-19.6)	-
8	(n=10) 68.6 (39.2-76.5)	(n=8) 0	(n=2) 82.4 (82.4-82.4)	(n=2) 38.25 (37.3-39.2)	(n=2) 24.5 (23.5-25.5)
9	(n=13) 45.1 (35.3-70.6)	(n=13) 0	(n=13) 54.9 (19.6-96.1)	–	–
10	(n=10) 88.2 (35.3-94.1)	(n=10) 39.2 (19.6-43.1)	(n=2) 15.65 (7.8-23.5)	(n=1) 27.5	–
11	(n=14) 88.2 (82.4-94.1)	(n=14) 25.5 (21.6-29.4)	(n=14) 92.2 (88.2-98)	(n=5) 16.65 (11.8-27.5)	(n=5) 11.8 (7.8-27.5)
Overall	(n=119) 75.4 (13.7-96.1)	(n=119) 0	(n=119) 57.85 (7.8-98)	(n=119) 27.5 (7.8-60.8)	(n=119) 19.6 (11.8-29.4)

Example of variation of descriptor by mode for a sound sample.
(C= curbing, OD= Overdrive, Dis=Distortion, Vib= Vibrato).

Element	Don't	dream	of	wo	men	'cause	they	on	ly	bring	you	down	
Descriptor	C	C	C	C	OD	C	C	OD	OD	C	C	C	Dis	Vib
(n=51)	37	44	44	46	24	36	34	48	16	39	35	17	41	20
%	72.5	86.3	86.3	90.2	47.1	70.6	66.7	94.1	31.4	76.5	68.6	33.3	80.4	40.2

Complete Vocal Institute