



The voice of Brazilian singer Roberto Carlos: auditory-perceptual assessment of songs from different decades

A voz do cantor Roberto Carlos: avaliação
perceptivo-auditiva de canções de diferentes
décadas

La voz del cantante brasileño Roberto Carlos:
evaluación perceptivo auditiva de canciones
de diferentes décadas

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Abstract

Purpose: To describe the voice of the singer Roberto Carlos through auditory-perceptual assessment of certain parameters in selected songs that were released between the 1960s and 1990s. **Methods:** Eight songs representative of the singer's career, two of them from each decade, were selected for the descriptive auditory-perceptual assessment of the voice. **Results:** As noticed in the study, Roberto Carlos maintained pneumophonoarticulatory coordination; loudness ranged from adequate to strong; pitch ranged from medium to high to medium; precise articulation; vocal attack ranged from abrupt to mild; dull voice; laryngopharyngeal resonance had a greater variation, including compensatory nasal focus, with increased nasal focus and discrete nasal focus, modal chest record, without projection, no vibrato,

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Authors' contributions:

SCCO: Study design and data collection.

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Received: 09/01/2020

Accepted: 03/17/2021



restricted tension, adapted vocal quality, adapted with tension, and adapted with slight breathiness. **Conclusion:** In the auditory-perceptual evaluation, some characteristics remained unchanged, such as pneumophonoarticulatory coordination, the precise articulation, the modal vocal registration of the chest, without projection, the absence of vibrato and the restricted tension. There was variation in relation to pitch, loudness, vocal attack and resonance was characterized as laryngopharyngeal with variations in relation to nasal focus. The main changes noticed in the singer's voice over the decades have been reported in the variation of musical genres presented by the singer.

Keywords: Voice; Voice quality; Singing; Music; Speech, Language and Hearing Sciences

Resumo

Objetivo: Descrever a voz do cantor Roberto Carlos por meio de avaliação perceptivo-auditiva de parâmetros determinados em canções escolhidas que foram lançadas ao longo das décadas de 60 a 90. **Métodos:** Oito canções representativas da carreira do cantor foram selecionadas para a avaliação perceptivo-auditiva descritiva da voz, sendo duas delas de cada década. **Resultados:** Roberto Carlos manteve a coordenação pneumofonoarticulatória, *loudness* variou de adequada para forte; *pitch* variou de médio para agudo a médio; articulação precisa; ataque vocal variou de brusco para suave; voz sem brilho; a ressonância laringofaríngea teve maior variação, sendo esta com foco nasal compensatório, com foco nasal acentuado e com foco nasal discreto, registro vocal modal peito, sem projeção, vibrato ausente, tessitura restrita, qualidade vocal adaptada, adaptada com tensão, e adaptada com discreta soproidade. **Conclusão:** Na avaliação perceptivo-auditiva algumas características se mantiveram inalteradas, como coordenação pneumofonoarticulatória, a articulação precisa, o registro vocal modal de peito, a voz sem brilho e sem projeção, a ausência de vibrato e a tessitura restrita. Houve variação em relação ao *pitch*, a *loudness*, o ataque vocal a ressonância foi caracterizada laringofaríngea com variações em relação ao foco nasal. As maiores mudanças observadas na voz do cantor no decorrer das décadas recaem sobre a variação de gêneros musicais cantados pelo cantor.

Palavras-chave: Voz; Qualidade da voz; Canto; Música, Fonoaudiologia

Resumen

Objetivo: Evaluación perceptiva auditiva de la voz de Roberto Carlos en canciones seleccionadas a lo largo de los años 60 y 90. **Métodos:** Para la evaluación se seleccionaron ocho canciones representativas de la trayectoria del cantante, dos canciones de cada década. **Resultados:** Roberto Carlos mantuvo la coordinación fonatoria, el volumen varió de adecuado a fuerte, el tono varió de medio a agudo a medio; articulación precisa; el ataque vocal varió de repentino a leve; voz apagada; la resonancia laringofaríngea tuvo mayor variación, con enfoque nasal compensatorio, con enfoque nasal acentuado y enfoque nasal discreto, registro vocal modal, sin proyección, vibrato ausente, tensión, calidad vocal adaptada, adaptada con tensión, adaptada con ligera soproidade. **Conclusión:** En la evaluación auditivo-perceptual, algunas características se mantuvieron sin cambios, como la coordinación fonatoria, la articulación precisa, el registro vocal modal del tórax, la voz apagada y sin proyección, la ausencia de vibrato y el tejido restringido. Hubo variación en relación al tono, volumen, ataque vocal y la resonancia se caracterizó como laringofaríngea con variaciones en relación al enfoque nasal. Las más grandes variaciones observadas en la voz del cantante se relacionan con las variaciones de los estilos musicales cantados entre las décadas.

Palabras clave: Voz; Calidad de La voz; Canto, Música; Fonoaudiología

Introduction

The voice of the Brazilian singer Roberto Carlos has been discussed among fans and professionals of Brazilian popular music (MPB) for a long time. According to biographer Paulo César de Araújo, Roberto Carlos is the most famous and popular singer of all time in Brazil¹. According to the author¹ “...*When the singer started to be successful, the mankind had not yet reached the moon, the Beatles had not yet conquered the world, the Cold War still divided the planet, and Brazil had only three World Cup titles. Well, then: the mankind went to the moon and returned, the Beatles became a legend, the Soviet Union ended, Brazil has already won its fifth world title and Roberto Carlos continues to be successful...*” (Book flap, 2006).

The singer has acted in the music scene for five decades, and has already achieved national and international attention² for his work. Even today, Roberto Carlos remains a professional capable of reaching an audience of the most varied social, cultural and economic classes².

Roberto Carlos started to gain notoriety at the time of the so-called *Jovem Guarda* (1960s), a movement that emerged as a Brazilian version of international rock, mainly influenced by bands such as The Beatles, The Rolling Stones, Gerry and Pacemakers, Gary Lewis and The Playboys, among others^{3,4}. Later, Roberto Carlos took on the romantic-sentimental tone in his songs, presenting a pleasant and soft voice, more focused on declaiming than singing⁵.

Several fields of knowledge have addressed the singer's skills, such as History, Social Psychology, Sociology, Music, among others, due to his relevance as a performer and as a musical and social phenomenon². Speech-language pathology has increasingly investigated singers and the sung voice due to the growing need to know more about the demands and peculiarities of these professionals^{6,7}.

Roberto Carlos' voice was analyzed in another research⁸ that aimed to analyze the vocal and acoustic parameters in the songs “*Emoções*”, “*Detalhes*”, “*É proibido fumar*” and “*Calhambeque*” by comparing pairs of excerpts from the original recordings, such as those from 2001. The results showed that the singer had fluid vocal quality; in addition to reduced singing speed; there was also variation in the articulation of words; the pitch lowered; the duration of pauses between words increased; the

modulations were richer and there was a greater use of vibrato in the 2001 recordings. Thus, the authors concluded that the changes observed in Roberto Carlos' voice resulted in an improvement in his performance and are a result of the romantic musical genre adopted by the performer.

As the phonological adjustments very close to the spoken voice adjustments⁹ are the main characteristic of the popular song, the performance becomes essential to convey the desired emotion.

Thus, the musical expressiveness and the message conveyed by the voice must be endowed with an emotional charge, and are determining factors for the personality of the singer. In addition, the emotional expression in singing is also influenced by the lyrics of the song, that is, by the composer¹⁰.

As an incredibly charismatic singer, with many years of career, who pleases audiences of the most varied age groups and social classes, in addition to remaining as one of the most beloved and remembered singers by the Brazilian people, this study was focused on learning about his vocal characteristics, a topic that is always interesting to speech-language pathology, which instill this singer's unique identity together with the interpretation and expressiveness.

Therefore, the study aimed to describe the voice of the singer Roberto Carlos through the auditory-perceptual analysis of songs recorded during the 60's to 90's.

Methods

Selection of songs

The sample collection included the remastered musical recordings of the singer Roberto Carlos in the form of compact disc (CD) referring to the 1960s (eight CDs with 96 tracks), 1970s (11 CDs with 127 tracks), 1980s (11 CDs with 107 tracks) and 1990s (10 CDs with 98 tracks), included in four boxes released by Sony/BMG (2004). Thus, a total of 428 recordings encompassed the 40 years of professional performance of the singer.

Eight songs were selected as the most representative between the 1960s and 1990s (two of each decade) for the auditory-perceptual assessment of the voice. The selection criteria were as follows: the greatest hits of the singer, as reported on his official website (www.robertocarlos.com), which were recorded in Portuguese, and that were outstanding songs according to the coordinator/producer of the

box edition. In addition, the records were analyzed decade by decade in the survey carried out on the singer's website, which includes all the albums already released in his career, and the most repeated songs were counted. Thus, the minimum of two songs per decade was defined, since the choice of only one song would not be able to fully represent the greatest hits over the decades.

Unlike the international music industry, there is no list in the Brazilian music industry compiling the most played and most successful songs in the country. After the researcher selected the songs for the study, the material was submitted to the singer's producer, who also agreed with the selection of the most striking and outstanding songs in Roberto Carlos' career. The following eight songs were selected between the 1960s and 1990s: "É proibido fumar" (1964); "Quero que vá tudo pro inferno" (1965); "Detalhes" (1971); "Amigo" (1977); "Emoções" (1981); "Caminhoneiro" (1984); "Luz divina" (1991); and "Nossa Senhora" (1993).

Procedures

Auditory-perceptual assessment of the voice

The descriptive evaluation of the voice was performed by three speech-language pathologists with a minimum experience of five years in the field of singing voice. An audio CD was prepared with the eight selected songs that were presented at random. The protocol developed for this study was based on the literature¹¹ and included the following items: pneumophonoarticulatory coordination (PFAC), pitch, loudness, resonance, vocal attack, articulation, shine, projection and vocal quality. The data obtained in the study resulted from the consensus analysis carried out by the three experts.

Results

Regarding the auditory-perceptual descriptive assessment, the opinion of the experts varied between decades according to the music analyzed (as shown in Chart 1).

In the 1960s, the presence of metal drew attention in both songs, which has not been repeated in any other decade.

In turn, there is a discrepancy in the analysis in the 1970s: from the pitch considered medium to high in the song "Detalhes" and medium in "Amigo"; loudness was considered adequate and strong, respectively; while the vocal attack varied from soft in one song to rough in the other. In the song "Detalhes", the singer has laryngopharyngeal resonance with discrete nasal focus, while in the song "Amigo", there is a laryngopharyngeal resonance with compensatory nasal focus. In turn, the vocal quality in "Detalhes" was adapted with the presence of slight breathiness.

The songs of the 1980s also had a pitch ranging from medium to medium high, and the vocal quality was considered adapted in "Emoções" and slightly breathy in "Caminhoneiro".

Finally, in the 1990s the singer showed differences in the pitch, which was medium to high in the song "Luz Divina" and medium in "Nossa Senhora"; loudness varied between strong and adequate, respectively; the vocal attack ranged from rough to soft; and there was a laryngopharyngeal resonance with compensatory nasal focus in the first song and a laryngopharyngeal resonance with discrete nasal focus in the second song.

Chart 1. Auditory-perceptual assessment of Brazilian singer Roberto Carlos in the 1960s, 1970s, 1980s and 1990s

Vocal parameters	1960s		1970s		1980s		1990s	
	É proibido fumar	Quero que vá tudo pro inferno	Detalhes	Amigo	Emoções	Caminho-neiro	Luz Divina	Nossa Senhora
CPFA	Coordinated	Coordinated	Coordinated	Coordinated	Coordinated	Coordinated	Coordinated	Coordinated
Pitch	Medium to high	Medium to high	Medium to high	Medium	Medium	Medium to high	Medium to high	Medium
Loudness	Strong	Adequate	Adequate	Strong	Adequate	Adequate	Strong	Adequate
Articulation	Precise	Precise	Precise	Precise	Precise	Precise	Precise	Precise
Vocal attack	Rough	Rough	Soft	Rough	Soft	Soft	Rough	Soft
Resonance	Laryngopharyngeal resonance with sharp nasal focus	Laryngopharyngeal resonance with sharp nasal focus	Laryngopharyngeal resonance with discrete nasal focus	Laryngopharyngeal resonance with compensatory nasal focus	Laryngopharyngeal resonance with discrete nasal focus	Laryngopharyngeal resonance with discrete nasal focus	Laryngopharyngeal resonance with compensatory nasal focus	Laryngopharyngeal resonance with discrete nasal focus
Voice register	Chest	Chest	Chest	Chest	Chest	Chest	Chest	Chest
Shine	No voice shine	No voice shine	No voice shine	No voice shine	No voice shine	No voice shine	No voice shine	No voice shine
Projection	No voice projection	No voice projection	No voice projection	No voice projection	No voice projection	No voice projection	No voice projection	No voice projection
Vibrato	No vocal vibrato	No vocal vibrato	No vocal vibrato	No vocal vibrato	No vocal vibrato	No vocal vibrato	No vocal vibrato	No vocal vibrato
Tessitura	Restricted tessitura	Restricted tessitura	Restricted tessitura	Restricted tessitura	Restricted tessitura	Restricted tessitura	Restricted tessitura	Restricted tessitura
Vocal quality	Adapted, presence of metal	Adapted, presence of metal	Adapted, presence of discrete breathiness	Adapted	Adapted	Discreetly breathy voice	Adapted, with tension	Adapted
What drew the most attention in the performance?	Presence of electric guitar	The singer uses a lot of dynamics of intensity in the high tones	The singer uses a lot of dynamics of intensity in the high tones	The singer has well-marked vowels and well-articulated articulation	The singer has variations in the intensity of the voice (in the high tones) mainly in the chorus	The singer shows changes in vocal intensity only in the chorus, in which breathiness is lost	<i>Vibrato with tremor characteristic; intensity variation used in an unbalanced way, voice with tension in increasing intensity. In addition to the singer's voice, there is a backing vocal</i>	Presence of a slight breathiness in the prolongation of vowels

Legenda: CPFA = Coordenação pneumofonoarticulatória

Discussion

As shown in Chart 1, the experts predominantly agreed on some parameters in the perceptual-auditory assessment of the voice of the singer Roberto Carlos, which, therefore, can be considered as coordinated, with medium to high pitch, adequate loudness, precise articulation, laryngopharyngeal resonance with discrete nasal focus, chest vocal register, with no brightness, no projection, no vibrato, restricted tessitura and adapted vocal quality, corresponding to the description of popular singing^{9,12}. It should be noted that the popular singing presents less demand in relation to loudness,

since the intensity of the desired voice is achieved through the use of the microphone in many cases. In addition, the assessed songs are part of a repertoire whose singing is similar to speech^{9,12-14}.

In turn, the articulation has been classified as precise in all decades. It should be noted that the text is highly valued in Brazilian popular music, since this musical genre excels in the quality and tuning of sounds in a wide frequency range, implying a conscious preparation of a shape and posture of the body organs that articulate the note issued^{13,15}. Tafarelo⁸ reported that there was variation in the articulation of certain words sung by the singer Roberto Carlos after he reached the age of 40 and the author believes that these articulation

changes are interpretative and do not characterize an articulatory imprecision.

Regarding the vocal register, the chest vocal register reported by the experts in all decades is more frequent in popular singing^{6,9,16}, since vocal adjustments are more similar to speech in this singing genre^{9,13}. Despite the influence of rock in *Jovem Guarda* in the 1960s, and *Bossa Nova* in the early 1970s, it should be noted that Roberto Carlos is a popular singer and, for many, a singer of romantic music, as noted in two of his greatest hits: “Emoções” and “Detalhes”.

The vocal quality was considered adapted, showing that there was no change in the eight songs of the four decades analyzed in this study. Despite the variation in the musical style of Roberto Carlos’ songs throughout his career, his voice showed few changes both in the filter (structures of the vocal tract that act as resonators)¹⁷ and in the glottal source.

The pitch showed variation from medium to medium to high in all decades. *Jovem Guarda*, which was an expression of the Brazilian rock movement, uses the electric guitar in the 1960s^{18,19}, which may explain this increase in frequency in the songs and the presence of metal in the voice^{20,21}. In the 1970s, 1980s and 1990s, variation was noted in the theme of songs, spoken singing and understanding of the lyrics of the song⁹.

The pitch is related to the tessitura of the voice and song, and it should be noted that Roberto Carlos maintained the range of frequencies even with advancing age, which is opposite to the literature²², which points out that, among other factors, presbyphonia it is characterized by an increase in the fundamental frequency in male voices and a reduction in female voices²². Despite maintaining the pitch from medium to medium to high, the study noted that Roberto Carlos has restricted tessitura in all the assessed songs, which means that he used the vocal intensity feature (increased loudness) to produce higher notes. As shown in the question in Chart 1, “What drew the most attention in the performance?”, many popular singers use this resource, which is usually associated with a lack of technique²³.

The vocal attack was characterized as rough in the 1960s, possibly due to the style of the performer and the rock genre, which is marked by vocal emissions that use a lot of energy, especially in the high notes²⁴. This type of vocal attack was also reported

in the 1990s in the song “*Luz Divina*”, in which there was a repertoire of religious songs, probably in order to impress more vigor.

The soft voice observed in the songs “*Detalhes*”, “*Emoções*”, “*Caminhoneiro*” and “*Nossa Senhora*” may be the result of the intimate, romantic and religious character adopted by the singer, since singers use their voices in different ways in order to create aesthetic differences⁹.

In turn, the singer presented laryngopharyngeal resonance with nasal focus, ranging from sharp, discreet and compensatory. Laryngopharyngeal resonance is characterized by the use of greater sound energy in the neck region¹¹, and this variation in relation to the nasal focus is in line with the peculiarities of the singer’s voice. Due to the restricted tessitura, he uses nasal resonance to achieve high tones; in other words, he uses the increase in loudness to reach the high tones¹¹ and, thus, ends up accentuating the nasal focus, the variation between discreet and compensatory is related to songs that require the singer to use less frequent high notes.

The singer had laryngopharyngeal resonance with sharp nasal focus in the 1960s, which may have caused tension in the pharynx wall (the metal), high pitch, in addition to the vocal quality with slight tension, which characterizes the resonance with sharp nasal focus¹¹, generating a higher pitched perception⁹. It is possible that the adjustments of the velopharynx, pharynx and larynx have provided the sensation of “metal” in the voice^{25,26}. This is the only decade in which the use of the electric guitar has been observed, which is in line with the characteristics reported in the singer’s voice during this period.

In the songs “*Detalhes*”, “*Emoções*” and “*Nossa Senhora*”, Roberto Carlos had laryngopharyngeal resonance with a discreet nasal focus, and the change in his singing style, moving to songs focused on romance and human and social relations, changed his way of singing. Therefore, the laryngopharyngeal resonance with discrete nasal focus was compatible, since the discreet nasal focus can symbolize affection and warmth²⁷. The predominance of laryngopharyngeal resonance with discrete nasal focus is possibly due to the adjustments made by the singer in line with the singing style and the message embedded in the songs.

In these four decades, Roberto Carlos was considered a singer with a dull voice. This may be due to the fact that the distribution of the voice in

the sound boxes did not occur in a balanced way, besides the voice does not present tension^{11,28}.

Two aspects can be considered given that the singer's voice had no projection, primarily because it was a recorded voice, subject to the conditions of the equipment, environment and repertoire. Second, the voice is less projected in the popular song due to its similarities to the spoken voice⁹ and the use of the sound amplification feature.

Vibrato, whose origin is classical singing, but which may be present differently among singing genres^{29,30}, has not been reported in any decade. This may have been a choice of the performer, due to the songs focused on rock and romantic singing. According to the findings of this study, Roberto Carlos had a discreet tremor at the end of some sentences only in religious songs, which could also be understood as a conscious resource for these songs.

In the 1970s and 1980s, the singer released very different songs within the same decade, as demonstrated in the song “*Detalhes*”, which is completely different from the song “*Amigo*”, and the song “*Emoções*” that is different from “*Caminhoneiro*”. The songs “*Detalhes*” and “*Emoções*” are similar to each other because they are romantic songs and used similar resonance and vocal attack resources, as shown in Chart 1.

Such particularities reported within the same decade can be explained by the huge difference in the genres of the songs assessed in each decade, in addition to issues related to the expressiveness and interpretation of the singer in each song.

Conclusion

Some characteristics remained unchanged in the auditory-perceptual evaluation, such as pneumophonoarticulatory coordination, the precise articulation, the chest vocal register, the dull voice with no projection, the absence of vibrato and the restricted tessitura.

There was variation in pitch, ranging from medium to medium high, loudness, which ranged from strong and adequate, and the vocal attack was considered rough in some songs and soft in others. In turn, there was a laryngopharyngeal resonance with variations in the nasal focus (sharp, discreet and compensatory), in addition to the dynamics in the use of intensity in high tones.

Finally, the main changes noticed in the singer's voice over the decades have been reported in the variation of musical genres presented by the singer, which can be divided into rock, romantic, pop and religious styles. In two decades (1970s and 1980s), there was a huge difference in relation to the songs evaluated in the same decade.

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