Muszkalska, Bozena
Vos Desafinada - The "out-of-tune voice" in Portuguese polyvocal songs
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The Portuguese regions of Beira Alta, Douro Litoral and Minho, situated to the north of the river Tag, preserved the relic form of the archaic style of the polyvocal song. Its characteristic feature is the manner of intoning accords which might produce in the listener an association with out of tune performances. In their descriptions of this type of singing informers used the term vos desafinada - the "out-of-tune voice". In addition, they confirmed that the old-style songs sounded "out of tune", thus differing from renditions maintained in the new style. By resorting to the vocabulary of psycho-acousticians we might say that the employment of a specific intonation technique, which takes into consideration the manner of the mutual impact of the chord components at a vertical level, enables the Portuguese to achieve a rough sonority of accords. Such sonority is the effect of the beats which occur in the human ear due to the parallel sounding of tones with a slight frequency difference (Aures 1985).

The described phenomenon was not revealed in transcriptions of songs contained in numerous published collections, i. a. by Michel Giacometti, Vergilio Pereira and Gonsalo Sampaio. Apparently, those registers demonstrate that Portuguese songs are simply performed in parallel thirds with the sometimes added third component of the triad and the prime doubled in the octave. Meanwhile, assorted recordings, including those which served as a basis for transcriptions, such as the ones made by Giacometti, present the sonority of Portuguese polyvocal qualities differently than it might follow from the musical text. This gap is partially compensated by the opinions of researchers expressed in verbal commentaries to the recordings, maintaining that the Portuguese female singers (this style is performed by women) reveal a characteristic tolerance via a vis the intonation of sounds. If we were to refer
the pitches occurring in such performances to degrees of a scale that comprises the foundation of the melodic structure, then it frequently becomes obvious that a single degree corresponds to several sounds. In reality, this finding might denote a certain flexibility in the approach to intonation, especially in the case of ornaments. On the other hand, the varied intonation of the same degree is just as often dictated by a wish to localise sounds of such frequencies which, by entering mutual dependencies, would yield the beats. It is possible to observe how the performers seek such sounds by fluently shifting themselves within the range of micro-interval spaces, and at the moment of reaching the target frequently demonstrate their satisfaction by prolonging the rhythmic values of the accords and increasing the force of the voice.

The performance style which is the object of our attention is associated with a polyvocal female repertoire, encompassing songs that accompany farm work, i. a. harvests (wheat and rye), the stripping of maize leaves, the successive stages of processing flax, and grape picking as well as religious songs, e. g. the canto de romaria, the songs of pilgrims setting off for more or less distant shrines and sanctuaries, or the canto dos Reis, performed by carol singers during Epiphany. The aforementioned types of songs were, and are transmitted within lower social strata, hired farm workers, owners of small farm-steads and shepherds. Hence, they are frequently treated as the "worse" element of musical culture. It is not surprising that we observe a restriction of the traditional polyvocal repertoire, while ensembles which attempt to continue its cultivation disclose a tendency toward changing the intonation to a more tempered one and reducing the more expanded structure to simple sequences of parallel thirds. This type of change within the musical structure takes place probably under the impact of the style propagated by so-called ranchos folcloricos, which have dominated the mass media and all types of ceremonies, and which have become the prime export commodity (within the domain of music). Ranchos music is typical "easy listening": the simple melody is sung in a very high register to the accompaniment of traditional string instruments and an accordion. The attention of the audience is concentrated predominantly on dance figures, with a rich choreography and performed in colourful regional costumes. The harmonic construction remains under the distinct impact of the minor-major system, and the intonation does not veer from a tempered version.

Songs retained in the old style are realised in three voices in Beira Alta and Douro Litoral, and in four voices - in Minho. The latter variant was known also in Douro Litoral, but at present renditions with the participation of the fourth voice, a high falsetto known as guincho, are heard only sporadically. The basis of the polyvocal construction consists of sequences of the primary form
of triads, more rarely in the first overturn, built upon the sounds of the main melody in the lowest voice. Each stanza starts with a section performed by one of the singers of the lowest voice part or unisono by the entire group. After the single-voice introduction, the voices enter, arranged from the lowest to the highest. In certain songs from Minho the top voice part encompasses only a single sound - the first degree of the scale doubled in the upper octave in relation to the finalis of the main melody. In this region, we also encounter a different style of singing, with more developed polyphonic constructions resembling composed music. In such cases, the characteristic intonation is absent. In another variant of the four-voice performance the lowest voice emulates the main melody an octave higher and along a longer section. The lower voice always possesses a multiple (at least two persons) group of performers, while the parts of each of the higher voices are realised by a single singer or, more rarely, two women. Today, the performers of the main melody increasingly frequently include also men. The inseparable attributes of singing in the old style are, according to the performers themselves, a high register and vocal force. The characteristic trait of the arrangement of the ensembles is a maximum concentration of the female singers in a circle, a semi-circle or in three rows, each composed of two or more persons. The pattern of the voices is not constant, but the performers carefully select their neighbours already prior to the performance. While singing, performers of the high voice parts often bend towards each other and hold a hand on the cheek or cupped next to the ear.

The voices are given folk names linked with the position of the voice in the polyvocal arrangement (e. g. baixo = low, alto and por cima = high), with the colour of the voice (raso = flat, smooth, guincho = squeaky), its function (descanta = the opposite of baixo, the singing voice or canta, comeca = begins, bota o fim = ends) or with the place of the vocal part in the course of the stanza (rabo = end, fim = end). Descriptions supplied by the performers show that the function of the top voices consists in "filling" ( encher ) the chords constructed upon the sounds of the melody in the lowest voice. All the voices are ascribed equal importance and are permanently integrated.

Analyses of sound spectrums in songs performed in the old style, conducted in the Institute of Musicology at the Humboldt University in Berlin and the Institute of Telecommunication and Acoustics at Wroclaw Polytechnic, enabled a more profound comprehension of the essence of the phenomenon connected with the Portuguese term vos desafinada (cf. Muszkalska, Szmal 1998; Muszkalska, Auhagen 1999). The analysed material comes from collections amassed by the author of this article in the course of on-the-spot research conducted in 1994 and 1996. The study took into account chords with longer rhythmic values of a determined state. The obtained amplitude
spectrums referred to whole chords, and thus to all the sounds which are their components. In a further part of my work I intend to present the achieved outcome. True, it cannot serve as a basis for the formulation of ultimate conclusions, but it could indicate the direction of further investigations.

As is known, relations of the frequency of sounds creating the octave, fifth and third intervals in a tempered tune are expressed by small integers. Considerable oscillations between the size of those intervals in Portuguese songs are the reason why such relations become more complicated. Adjacent harmonic tones of the components of the triad frequently remain, also in finale chords, in such relations which generate beats, whose frequency equals the difference between the frequency of component tones (cf. Rakowski 1979). If the difference between two tones amounts to less than about 15 Hz the ear experiences the impression of a fluctuation of loudness, i. e. the sound periodically disappears. Above that level, the beats are heard as roughness (Terhardt 1974, Aures 1985). Calculations concerning roughness are the realm of psycho-acousticians, who take into consideration also parameters other than numerically expressed frequency. If, however, the analysed spectrums of accords consider only differences in the frequency of the harmonic tones of the fifth and the octave, then it is possible to ascertain that inasmuch as in so-called consonance intervals (in the psycho-acoustic sense) such frequencies would overlap, in the case of Portuguese songs their differences, upon numerous occasions, exceed 15 Hz; in the fifth they reach 25 Hz, and in the octave - 18 Hz.

The conducted analyses demonstrated further the absence of distinct rules that would define which components of the chord are to be lowered or raised, if we accept the tempered triad as our point of reference. The prime target is a quest for such a size of the interval which would render possible the attainment of roughness, or so-called sensoric dissonance. An important role is played by an inner division of the chords; the frame - the octave or the fifth - could be "pure", while the inner interval relations decide about the roughness of the sonority of the whole. Presumably, the singers take their bearings according to selected voices and not entire chords. This fact is confirmed by observations of ensembles during recordings, when a suitable adjacent location of particular members of the ensemble makes it possible to attain satisfactory sonority.

The origin of the beats is favoured by a punctual emission of sounds, since it increases the feasibility of an interference of sound waves (cf. Hausman 1958). The waves should reach one ear simultaneously. Rudolf Brandl, who examined the roughness of sonority in Balkan music, describes this phenomenon as monaural emission (cf. e. g. Brandl 1989). If the same
sounds or simple tones reach each ear separately, then the impression of roughness disappears, since the beats have not been achieved. Meanwhile, the traditional arrangement of ensembles from the regions under examination outright presumes the maximum proximity of the performers.

Furthermore, the dissonance quality of sonority increases the sharpness of the voice and its considerable loudness (cf. Aures 1985). Sharpness is a feature which reveals itself in the sound spectrum in the form of an abundance of aliquots (Bismarck 1974). The more aliquots are found in the sound spectrum the greater the number of the possibilities of generating such relations between a closely situated harmony that would yield the beats. A comparison of the amplitude spectrums obtained for chords intoned first by non-professional ensembles and then by organised groups of singers allows us to state that the characteristic feature of the former is a much larger frequency range, i.e. greater sharpness than in the latter instance. The presence of higher frequencies in the sound spectrum leads to relations between further harmonic tones of interval components enhancing the impression of roughness. As regards the second of the above mentioned features, i.e. loudness, let us recall that the Portuguese women, and especially the performers of the higher voice parts, sing with enormous force and are outright flushed with exertion. The mentioned songs were, after all, intended, to be performed out of doors, in the open space of the highlands (the entire region in which such songs occur is mountainous). While intoning chords with rough sonority the performers increase the volume, although it would appear that they had already attained the limits of all possibilities. Within the context of the examined problem another essential observation indicates that the growth of the effective force of sonority causes the intensification of the loudness of the aliquots to a degree greater than that of the basic tone, and that it affects the higher aliquots more than the lower ones. Such a phenomenon is concurrent with the observation that lower harmonics dominate in sounds of lower loudness (Sunberg 1987). This fact assumes particular prominence in the case of accords with a high degree of blending in the natural tune, in which frequency differences, significant for the origin of the effect of roughness, occur at the level of higher harmonics. In Douro Litoral the name cramol, derived from the word clamor ("a cry") is applied in reference to groups of songs. The ensembles begin singing loudly (usually after a solo introduction), maintain the high level of loudness throughout the whole duration of the performance, and then end abruptly. The female singers harbour a well-defined opinion about the dependency between the register of the singing and loudness, and claim that due to the louder sonority of the voice in the higher registers is it permissible to increase only the number of the performers of the low voices. At times, the number of performers realising the high voices is also doubled, but then at least three
persons (or rather a greater number) realise the "bass" part.

A spectrum analysis of the accords appearing in registered realisations confirms the weakly marked presence of the basic tone and the concentration of energy on the narrow frequency band above it. This means that perception is reversed from the tones of the basic components of the accords, and focused on the aliquots. Such a reaction is further reinforced as a result of the disintegration of all or some of the formants in several frequencies.

We are entitled to conclude that during musical realisation the female singers of traditional Portuguese ensembles, in contrast to members of professional choirs, observe the colour of the interval, rendered indelible in their memory, and not the size of the interval. Hence the steps along the scale of the melody succumb to modulation in their capacity as the actually sounding modulation. The additional tuning of accords during the performance is possible thanks to the solo realisation of the majority of the voices. The growing number of performers, introduced in recent times and patterned on professional choirs, leads to the disappearance of sonoric merits achieved while employing the above described manner of intonation. In those instances, the measure of the interval becomes more important than its sonoric quality.

Roughness, characteristic for sounds recognised in the theory of professional music as those possessing consonance qualities, such as octaves, fifths, thirds and major and minor triads, the sharpness of the voice colour, the relatively small amplitude of the basic tone, the maximum loudness of all the voices, and the narrow arrangement of the ensemble, rendering possible punctual voice emission - those are the properties which render the Portuguese style of singing from the mentioned regions closer to the rendition styles from the Mediterranean area. Similar traits are disclosed by the realisations of the Corsican paghielle, the Sicilian lamenti, and songs from mainland Italy such as canto a vatoccu, a pennese, et al. In contrast to the European polyvocal nature of the professional current, in which we observe a striving towards the attainment of a maximum purity of accords, the mentioned traditional styles reveal an intentional departure of the performers from pure sonority. All the songs performed in this manner originate from the musical repertoires of the shepherd-farming societies inhabiting mountainous terrains. Such songs are associated with the ritual, religious and emotional domains of life of the singer, both as a member of a social group and an individual. On the one hand, they seem to contain transcendent messages, which through the intermediary of the singers are transmitted to other worlds; on the other hand - they refer to loftiest human feelings. The rendition of the songs is always accompanied by an atmosphere of considerable emotional tension. The singers remain in a state compared by researchers to a trance; they often
keep their eyes closed or "rolled", and retain utmost concentration on the fulfilment of their mission. They are not overly concerned with a transmission of the semantic details of the verbal texts, universally known to the audience, and at times outright intentionally deform the course of transmission. Those deformations of the verbal-musical transmission are carried out probably in order to focus attention on the sonoric aspect of the performed music. In a paraphrase of the expression "dirty playing", which Felix Hoerburger used, following the example of jazz musicians, in reference to folk instrumental praxis, one could say that the sonoric ideal pursued by the performers of polyvocal songs from northern and central Portugal, faithful to old tradition, as well as by singers from many other regions of the Mediterranean basin, is expressed in "dirty singing".

References

Tune your heart with mine the way it used to be,
Join with me in harmony and sing a song of love,
We're bound to get in tune again before too long,
There'll be no Desafinado when your heart belongs to me completely
Then you won't be slightly out of tune, you'll sing along with me!

Submit Corrections. Writer(s): Antonio Carlos Jobim, Jon Hendricks, Jessie Cavanaugh, Newton Mendonca. AZLyrics. P. Perry Como
Lyrics. album: "The Songs I Love" (1963). Translation of 'Desafinado' by João Gilberto (João Gilberto Prado Pereira de Oliveira) from
softly beats. In the chest of those who sing out of tune. A heart is beating as well. Thanks!