

Singing development: Comparisons between Poor Pitch Singers and other Groups

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Introduction

A defective singing ability often entails a feeling of being outside a singing community. This can be experienced as a social disability. If a child, who is a poor singer, is told early by her/his family, teachers or others that s/he cannot sing, this often results in an inhibition for life (Lidman Magnusson, 1994). There are descriptions of music teachers whose negative statements about people's singing ability probably established and strengthened a dysfunction in the singing ability (Palmgren, 1885; Lind, 1897; Reberg, 1993; Rolle, 1914; Torell, 1945). Defective singing ability is described and named in different ways (Welch 1979a). The most common criteria of a defective singing ability are:

- little ability to follow the melody contour
- little ability to follow the melody rhythm
- singing at very low pitch
- the range in singing is limited to a few tones

The range of the voice also seems to be limited to just a few notes (Lidman Magnusson, 1988, 1994). Terms used are low pitch singers, inaccurate singers, poor pitch singers, weak singers, monotones and onchi singing. I have chosen to use *Dysfunction in the Singing-ability-System (DSS)* to describe an undeveloped singing ability. This term stands for inhibition - cancellation, slowing down and ceasing — of several of the mental processes, which are linked to the creation of singing ability. Given this definition, a DSS- diagnosis provides a hint that certain central phases in singing development perhaps have been blocked.

My own research indicates that one can suffer from inhibited singing-development without being inhibited in a more general way, that is, solely the singing-development may be blocked or damaged. Descriptions of different kinds of undeveloped singing ability are found in a number of articles and dissertations, for instance, Norioka (1992), and Hermann (1983, cited in Bruhn, 1991).

Possible hindrances to singing development.

The problem for a *poor pitch singer* is probably due to an interruption of the singing development at a lower developmental level. The poor pitch singer has not continued his or her singing development as most people do. This does not mean that children who have come to a standstill in their singing development are unable to sing. Rather their singing development has not been sufficiently sup-

ported by education and suitable instruction at a certain point. Singing can be regarded as an interaction between sensory, motor and cognitive processes. Most scientists who have investigated poor pitch singing have assumed that singing disturbances arise in the motor area or are due to cognitive factors. They may also depend on hearing deficits but only in a few cases. Even deficient intelligence and difficulty with schoolwork can affect singing ability, as well as social disturbances, such as frictions in the family or in the environment (Bruhn 1991). Reasons for singing problems may also stem from emotional problems in the form of inhibitions, misfortunes, aggressiveness etc. (Bruhn, 1991). Robinson (1963, cited in Welch 1979a) found that orphan children who were disturbed and unhappy were without exception classified as poor pitch singers. Several studies clearly show the importance of an favourable home environment and of the family's positive attitudes to singing development and artistic talent in children. The singing ability of an adult possibly depends on an interaction between different factors among the groups mentioned above but even from the influence in form of positive or negative attitudes in the family, too hard an upbringing (Lidman Magnusson, 1994).

Previous studies

My earliest investigations about the Dysfunction in the singing-ability-system in adults (Lidman Magnusson, 1988) have primarily tried to show profiles of people with *DSS*. Seven persons with *DSS* had exercise privately ten times. The investigation showed that they were able to learn more about singing and develop their singing ability. A further investigation about the appearance of *DSS* and its background was presented in Lidman Magnusson (1994). The purpose of this study was to describe possible causes and relations between factors that can contribute to *DSS*. Ten persons were chosen out of 83 persons answering a questionnaire and invited to an interview and an evaluation of their singing voices was done. Before the interviews the participants sang a song chosen by themselves and an obligatory song (*Ba, Ba Black Sheep*). The latter song was also performed after the interview. Their singing was evaluated by five judges (professional musicians and amateurs) using five scales:

- Total Impression
- Ability to Sing in Tune
- Potential for Vocal Dynamics
- Rhythmic stability
- Voice quality

Regression analysis showed that the scale "Total Impression" was best predicted by the "Ability to Sing in Tune" category. These previous studies suggested several psychological and social factors that can interact and make hindrances for early singing development. Therefore a new investigation should investigate the relevance of such factors as circumstances during the individual's growing up period, personal abilities and characteristics, positive reinforcement, etc. and further try to make comparisons with people who are singing and playing and thus not show *DSS*. Are there differences and in which way? The purpose of the new investigation was principally to describe similarities and/or

dissimilarities between different groups of people concerning circumstances while growing up, individual abilities and characteristics, positive and/or negative influences and other factors of importance for singing development and further to examine the relations found in earlier investigations using a considerably larger number of people.

Methods

Questionnaire

A comprehensive questionnaire was constructed based upon the results from the two other investigations (Lidman Magnusson, 1988, 1994). It comprised 120 statements, divided into 13 different categories. The categories refer to Circumstances during the childhood, Music activities in the family, Music listening habits, Singing habits, Music in Kindergarten and in compulsory school, Negative judgments concerning one's singing, Leisure time activities, Music activities as adults, Social relationships, Positive/negative influences, and Statements concerning one's own personality. The participant indicated his/her agreement with the respective statement using a five step scale ranging from "Very good agreement" (5) to "No agreement at all" (1).

Participants

The purpose was to distribute the questionnaire to groups of different age and occupation with both genders about equally represented. This may make it possible to compare people who can be described as having *DSS* with people who have not (such as professional musicians and singers), and compare people who do not perform music with professional musicians. Usually the participants completed the questionnaire privately in their homes; students made it during class. Time required was about 20-30 minutes.

Results

About 500 questionnaires were distributed, and 425 (85 %) were answered. Out of these 318 (75 %) were female and 107 (25 %) males, age range 18 - 70 years. The statistical treatment comprised usual descriptive statistics, further correlations, factor analyses and regression analyses. The different statements in the questionnaire were grouped into two super-ordinate categories, referring to possible causes of and to the possible effects or indicators of *DSS*, respectively; this reflects the original construction of the questionnaire.

There were five groups of statements indicating possible causes of *DDS*: social relationship psycho-social upbringing, musical socialization, influence (positive/negative influence from family, school etc), and speech and hearing.

Four groups of statements referred to effects: self image, relationship to music, experience of one's own voice, and singing behavior. The statements in each of these nine groups were subjected to factor analysis (component analysis followed by varimax rotation) to reduce them to a smaller number. For instance, the group *INFLUENCE* originally consisted of nine statements referring to school-related positive influences, positive music influences by parents, general positive

influences by parents, criticism of one's singing and several others; after factor analysis these could be reduced to four variables.

Some examples of correlations within the respective groups in the "cause" category are as follows. The largest correlation in the group *influence* is between school-related Positive Influence and Critized ($r = -.472$); in psychosocial upbringing between Shy-Melancholy and Afraid (.422); in Musical socialization between Own Singing and Mother's Music Activities (.407) and between Own Singing and Father's Music Activities (.366); the correlation between Own Singing and Music in the Family is still higher, .588); in social relationships there are high correlations between Relationship to father and Relationship to mother (.446) as well as between Relationship to mother and Relationship to family (.592), and between Relationship to father and Relationship to family (.605). No significant correlations were found between variables in talking and hearing.

In the "effects" category the highest correlations within groups are the following. In *Self-image* the highest correlation is between Positive self image and Sensitive to Criticism (-.440) and, conversely, between Negative self image and Sensitive to Criticism (.481); in Relationship to music between Listening and Liking music and Musical Consciousness (.306); in experience of one's own singing between Singing feels good and Hoarseness/Voice fatigue (-.341) and between Bad Singing and Hoarseness/Voice fatigue (.358); in singing behaviour there is a high negative correlation between Singing and humming and Stopped singing (-0.554). On-going analyses of the relations between "cause" and "effect" groups include regression analyses and LISREL-type analyses will be reported elsewhere.

Discussion

Factors Influencing Singing Development in Poor-Pitch Singers

Singing involves a lot of physical and mental processes, working together in a suitable way, so that you can talk about an ability to sing. The ability to sing, as well as singing behaviour thus depends on a dynamic system of working together. If the development of this system is inhibited in such a way that the dynamics in the system is disturbed, it does not help even if the fundamental mechanisms exist. There are different types of interactions between the individual and the environment. They tend to develop or to prevent the development of singing ability by facilitating or blocking the necessary dynamics in the system of cooperating factors of significance for singing behaviour. Each kind of *DSS* may be related to something in the personality and in a dimension which can influence the individual's experience of oneself. If we can find a cure for this situation this can bring rehabilitation for much more than *only* singing ability.

Earlier investigations about singing ability have often been focussed on disturbances, of one or another, of this function and even, but to a lesser extent, on motivational aspects. The present investigation attempts to find out how the dynamics in the system of interactions that develop an active singing ability look like. A tentative model of the dynamic relations between factors influencing singing development is shown in Figure 1.

Figure 1

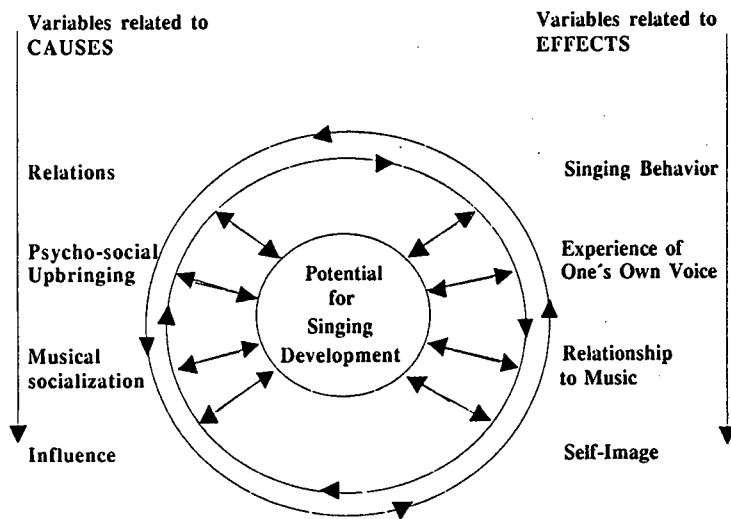


Figure 1.

The Dynamic Relations between Factors Influencing Singing Development

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Singing as Poetry: Qualities of Expressive Diction in Choral Singing

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"Above everything else, poetry is words, and...words, above everything else, are in poetry, sound" (Nickson, 1993, p. 25). Here American Pulitzer Prize-winning poet Wallace Stevens has expanded upon the more traditional description of poetry which is "the embodiment of imagination and emotion in language" (Webster's, 1937, p. 766). The singer seeks a synthesis of the imagination and emotion expressed through the text and the beauty and meaning of the sounds that comprise the words themselves. Singers communicate not only through the notes and words they sing but also by the manner in which words are produced and projected. As the number of singers increases, so does the importance of attention to details of uniformity and control.

Two distinct yet interrelated aspects of the poetry with which conductors deal are, first, the meaning of the words we project, and second, the 'poetry' of the sounds of the text. This discussion will analyze some of the aspects of vocal production and delivery of choral text that affect the meaning and communication of the music we sing — thus influencing the overall artistry of a performance. Through the analysis and application of specific vocal techniques used in text projection the conductor can become a catalyst toward the achievement of full expression of the music, as an ensemble seeks for its technique to serve its artistry. Although the goal is of an artistic nature the approach is, in part, technical.

Six potentially expressive elements of choral singing that will be discussed in relation to diction are blend, tone colour, diphthongs, sustained and pitched consonants, intonation, and word stress. After a brief description of each underlying concept, specific techniques for use in the choral rehearsal will be considered and each of these will then be applied to a brief text excerpt from Vivaldi's *Gloria* "Gloria in excelsis Deo" and in English "Glorious, Glory in the Highest". (Mvt. 1, mm 68-69).

Blend

Concept

A unified choral sound, with no individual voices projecting through the fabric of the ensemble, is considered to be one indication of a well-trained choir. One approach toward achieving such a choral blend is through uniform vowel matching. This requires first an understanding of the vowels on a bright to dark continuum of [i e a o u]. The natural production of the [i] ("ee") vowel is the furthest forward, with the [e] ("ay") produced only slightly further back. Both of these sounds are naturally bright. The [u] ("oo") vowel is produced the furthest

back, with the [o] ("oh") only slightly further forward, resulting in darker vowel sounds. The [a] ("ah") lies between the two bright and the two dark vowels. Hence, the continuum of natural vowel placement from brightest to darkest of [i e a o u].

Technique

Without an awareness and control of vowel formation and placement, singers will naturally produce words containing [i] and [e] sounds with a brighter, usually thinner, tone quality than words with [u] and [o]. The result is an uneven vocal line and a lack of ensemble. In order to achieve a uniformity of vowels throughout a musical line the [i] and [e] sounds need to be darkened slightly and [u] and [o] brightened. This can be achieved by a slight rounding of the bright vowels and a high, forward placement of darker vowels.

Exercises that alternate bright and dark vowels help to bring the best qualities of each into the basic choral sound, resulting in a tone that is rich and warm and at the same time forward and ringing. The blend of the ensemble is enhanced by having all singers produce exactly the same vowel at the same time. Once the members of the ensemble have an individual awareness and control of vowel uniformity, further use can be made of variations of tone colour for expressive purposes.

Application

In the text, "Gloria in excelsis Deo," bright and dark vowels are alternated in the words "Gloria" and "Deo." Without attention to the placement and uniformity of the vowels, the "i" and "e" will sound considerably thinner than the other vowels, creating an uneven vocal line. If singers are encouraged to sing these bright vowels through a shape similar to the "o" of "Gloria" the overall uniformity and richness of tone will be enhanced, not only within the individual singers' voice part but across the ensemble as well.

Tone Colour

Concept

Vocal sound is often described as bright, dark, thin, rich, and many other shades of vowel qualities. The tone colour used for a particular word, phrase, or composition is determined by the style of the music and the meaning of the text. Use of appropriate and varied tone colour enhances the literal and emotional message conveyed to the listener.

Technique

Tone colour is controlled by two means — mental and physical. Singers usually respond easily to the suggestion that they make the sound brighter, richer, etc. When the conductor employs imagery to gain the desired tone colour, the technique being used is mental although the result is also physical. Darker colours of sound are generally produced with a lower jaw and rounder vowel shape; brighter tones are usually less open with a more horizontal shape. When a conductor asks singers to drop their jaws or round the vowels, physical control of tone colour is being employed. Physical and mental approaches to tone colour can be used independently or, more successfully, in combination. One result that

sometimes occurs when a conductor seeks to control tone colour through purely physical means is a somewhat mechanical production. An advantage of guiding a choir toward greater awareness of tone colour lies in the resulting focus on the meaning of the words, as singers make an effort to bring the text to life.

One exercise for helping an ensemble to become more aware of the effect of tone colour is to extract a phrase being rehearsed and ask singers to let the very sound of their singing reflect the different moods conjured by such words as "majestic," "somber," or "joyful." After having become aware of a variety of tone colours, singers can then analyze what physical changes were taking place as each colour was produced.

Application

The challenge in a phrase such as "Gloria in excelsis Deo" lies in maintaining a uniformity throughout bright and dark vowels while at the same time allowing the overall joyful nature of the text to project. Both physical and mental approaches can work together to help singers find a forward, bright "o" vowel on the first word, "Gloria," which will then establish the placement and shape of the words to follow. A conductor can ask singers to let the meaning of the words reflect in their sound, while also being aware of letting the meaning show facially.

Diphthongs

Concept

A diphthong contains two vowel sounds within one syllable. If one necessary element for a choral blend is that all singers produce the same vowel at the same time, then the uniform treatment of diphthongs is crucial for both clarity and blend.

Technique

The two parts of a diphthong are referred to as the "initial" and the "vanish." In most cases, singers must be aware of sustaining the "initial" vowel. For example, in the word "high" singers would sustain the [a] and wait to close to the [i] with the cutoff. Obviously, the choral blend would be greatly distorted if some singers go to the [i] while others are sustaining the [a]. Diphthongs encountered most frequently in English include the double vowel sounds heard in words such as "night," "day," "boy," "now," "go," and "few" (which is an inverted diphthong because the second vowel is sustained). One of the greatest advantages of diphthong awareness lies in the avoidance of creating diphthongs where they are inappropriate, such as when sustaining "o" or "e" in Latin.

Application

Both the Latin and English words of the "Gloria" contain potential diphthong challenges. In the Latin, there is a tendency on the part of English-speaking singers to turn both syllables of the word "Deo" into diphthongs. Creating unwanted diphthongs can be avoided if singers keep their vowel formation exactly the same while sustaining a vowel, i.e., not moving the tongue, jaw or lips while singing the "e" or the "o." In the English, the ensemble blend can be lost on the word "highest" unless all singers produce the two vowels at exactly the same

time. This is controlled by having singers delay the second half of the diphthong until the beginning of the following syllable.

Sustained and Pitched Consonants

Concept

A general guideline for singing is that vowels are long and consonants are short. Consonants must also be sung rhythmically and in tune. It is the conductor's responsibility to help singers to become aware of which consonants could be sustained and which ones have pitch. Some manipulation of the duration or pitch of certain consonants might be desired at times for expressive or stylistic purposes, but here again, an awareness of the properties of the individual sounds is first needed.

Technique

One technique for creating such an awareness is to write out the International Phonetic Alphabet symbols for the 24 consonant sounds found in English, and have singers slowly speak each of these sounds while lightly touching the front of their throats. Vibration in the larynx will be felt with the hand if the consonant is pitched, regardless of whether or not it is sustained. Pitched consonants can be underlined as they are identified. By speaking slowly, singers can also determine which consonant sounds can be sustained and might inadvertently distort the musical line by taking too much time away from the vowel.

When seeking to build awareness of pitched and/or sustained consonants while singing, a conductor can ask a choir to first sing a phrase using only the vowels of the words. Next, have singers slowly speak the words aloud and identify both pitched and sustained consonants. Then, for one time only, sing it "wrong" by scooping up on pitched consonants and holding on to all consonants that can be sustained. Finally, sing the phrase with long vowels and short, in-tune consonants, noting the resulting difference between an "amateur" and "polished" ensemble sound.

Application

The most problematic consonants in the phrase "Gloria in excelsis Deo" are "l" and "n." The "l"s of "Gloria" and "excelsis" must be fast, on pitch, made with the tip of the tongue rather than at the sides. Singers must also control the duration and pitch of the "n" in the word "in" lest the note have virtually no vowel and be lost in the phrase. Asking singers to sustain the vowel as long as possible is useful. The "r," of course, must be flipped.

Intonation

Concept

There are many reasons for difficulties with intonation. These include mental, physical, and acoustical causes as well as those related to tessitura and basic tone production. Understanding the effect of colour and placement of vowel sounds as well as the production of pitched consonants can be used as tools when dealing with tuning problems. In general, bright, forward vowels tend to raise the pitch, while dark or covered vowels tend to lower the pitch.

Technique

If a phrase sounds flat throughout, a conductor can have the singers take away the text and sing on a single bright syllable such as [vi] ("vee"); if it is sharp, sing the phrase on a darker syllable such as [ba] or [no], directing singers' attention to the tone placement and the pitch as influenced by the strategic use of bright or dark vowel sounds. Return to the original text making use of the new tone placement.

Word Stress

Concept

The meaning of the text is heightened when the natural stress of the spoken text is transferred to singing.

Technique

When singing a phrase of music without an awareness of word stress the result is often "hammered," with each syllable receiving equal emphasis. When singers speak the text aloud it can increase their awareness of the natural word stress. They can then mark the text with poetry symbols or other markings to indicate important strong and weak syllables. Unstressed syllables can be particularly challenging because they need control of the voice to maintain a steady support of the tone quality while varying syllable emphasis.

Application

1. Speak the words aloud and mark stressed syllables. 2. Chant-sing the text on a single pitch, emphasizing important syllables. 3. Sing the phrase again, attempting to transfer the spoken word stress to the sung phrase — *Gloria in excelsis Deo*.

Conclusion

Technique and artistry work together to create a successful musical performance. A conductor must find the balance between focussing solely on technical aspects of the music, (resulting in a cold, unpoetic performance), and the opposite extreme, (the creation of a performance that is full of emotion but without the substance and technique to support it). In the hands of a knowledgeable, artistic conductor specific vocal and choral techniques can be used to draw out the singers' fullest musical expression, and to create a truly poetic performance in which technique serves artistry.

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