

 SpringerWienNewYork

Meribeth Bunch Dayme

Dynamics of the Singing Voice

Fifth Edition

SpringerWienNewYork

Meribeth Bunch Dayme, Ph.D.
Consultant in Voice, London, England

With illustrations by Audrey Besterman
Consultant for Anatomical Portions: Ruth E.M. Bowden

This work is subject to copyright.

All rights are reserved, whether the whole or part of the material is concerned, specifically those of translation, reprinting, re-use of illustrations, broadcasting, reproduction by photocopying machines or similar means, and storage in data banks.

Product Liability: The publisher can give no guarantee for all the information contained in this book. This does also refer to information about drug dosage and application thereof. In every individual case the respective user must check its accuracy by consulting other pharmaceutical literature. The use of registered names, trademarks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

© 2009 Springer-Verlag/Wien
Printed in Austria
Springer-Verlag Wien New York is a part of
Springer Science + Business Media
springer.at

Typesetting and Printing: Holzhausen Druck & Medien GmbH, 1140 Vienna, Austria

Printed on acid-free and chlorine-free bleached paper
SPIN: 12463329

With 67 Figures

Library of Congress Control Number: 2009927288

ISBN 978-3-211-88728-8 SpringerWienNewYork
ISBN 3-211-82985-7 4th edn. SpringerWienNewYork

Foreword

This 5th Edition of *Dynamics of the Singing Voice* represents an amalgamation of the new and the old. The most dramatic changes are the first four chapters, which point to many possible new directions in this century. The sections on vocal anatomy have only minor changes because the anatomy has not changed. Our understanding of function has evolved, but as of yet, not as much as we would like. For this reason, a Chapter 12, *Research in Singing* was written.

The advent of the Internet brought the world to everyone, as almost anything you want to know can be found there. It is easy to be a scholar now—just ask any of the search engines. For this reason, the old, vast bibliography has been updated and trimmed. When the original book was written, there were no comprehensive bibliographies for singers to study and it was done as a service. Now there are so many excellent texts with huge numbers of references by Sataloff, Titze, Sundberg, and many others.

As a help to all those singers who struggle with the science and anatomy, *Study Outlines for Vocal Anatomy* have been included in the appendices. These were originally written for my vocal anatomy courses.

The book emphasizes vocal anatomy with little attention being given to acoustics. There are excellent treatises on acoustics by Titze, Sundberg, Howard and others who know far more than I in this area.

Over the years of the publication of this book, much has changed; and that includes the author. I apologize if the writing style is slightly different in the new and old sections. The study of the human voice, and now energy field, has been a source of never ending fascination for me. I wish the same for you in your pursuit of singing and teaching.

Preface

The end is now the beginning

When *Dynamics of the Singing Voice* was written more than twenty-five years ago, it answered a need to know. This new edition is about the need to understand. As Einstein stated so aptly: *A man should look for what is, and not for what he thinks should be. Information is not knowledge.*

The aim of this new edition is to look at ways we can expand our knowledge by looking for what is, and explore new frontiers in voice and singing while at the same time honoring what we have from the past. The understanding of the physical structure, psychology, and old pedagogical methods are no longer sufficient and we need to spend time evaluating what is and was useful, and what no longer serves us. Not only has science expanded enormously and taken great leaps, so has our understanding of the whole world of self-development--physically, mentally and spiritually. It is time for us to look at these developments in relation to the human voice and to the teaching of singing.

Our intellectual knowledge of the voice has increased multifold over the past thirty years and will continue. However, this is only one side of a very incomplete picture. The need to satisfy academic guidelines, and quantify information in order to prove its value, has made us overly analytical/critical in areas where we have no need for those kinds of conversations, inner or outer, and has upset the balance of how we learn, teach, and perform.

The previous editions of this book emphasized the need to understand the physical structure of the vocal mechanism and to be able to communicate this. Certainly, this is now part of most graduate curricula in vocal pedagogy, and while it is still important to know this information, it no longer is necessary to emphasize it to the detriment of seeing the larger context. This edition of *Dynamics of the Singing Voice* retains much of its original information on vocal anatomy with the exception of small alterations throughout. Students and teachers all over the world have loved the clarity of the writing about the anatomy, so I would not change that. Study guides I created for my vocal anatomy courses also have been added as appendices to help you learn. You will note that while the physical aspects of voice

still occupy most of the space in the book, they are now located at the end because concepts being explored in the last chapters of previous editions are very important to what is happening now. In the last thirty-five years there has been huge expansion of knowledge and information relating to areas of self-development, quantum concepts in science and healing, and access to singing, sounds and music from every corner of the world.

Scientists, especially the quantum physicists, no longer speak of the human body as being composed of molecules or atoms; it is now the human energy field, the fabric of the universe, and particles (and lately strings). We will take a look at these expanded concepts and how they change the emphasis from the physical structure, to the broader areas of our thinking, teaching, relationships, therapy, and performance. We are beginning to see the merging of the arts, sciences, self-development, and spirituality in exciting ways that are meaningful to voice professionals. These ideas are now explored in the opening chapters along with the implications for a new look at vocal pedagogy, and practical ways of implementing these concepts in teaching and performing in the 21st Century.

This current edition is a compilation of years of my own growth and development, teaching and experience, as well as the thinking, ideas, and creativity of many. The feedback and appreciation of students and teachers who have studied and taught this text over the years has been gratifying. As I have learned from everyone, it would be impossible to name all the students, teachers and colleagues who have directly or indirectly contributed to the ideas contained in these pages. However, I must express my gratitude for the wise teaching and hours of enlightening discussion with several people who are now with us in spirit only, the late William Venard, a singer and teacher of distinction, a close musical friend, Shibley Boyes, and Professor R.V. Gregg who first taught me anatomy.

Without the skilled correction, discussion and editorial contribution of the late Professor R. E. M. Bowden relating to anatomy, this book would not have had the same quality. Not only did she give of her profound knowledge of anatomy, which she taught at The Royal Free Hospital School of Medicine and The Royal College of Surgeons for many, many years, but also her excellent literary skills. For all that I am deeply grateful. My thanks also to Audrey Besterman, a superb medical illustrator, the photographic departments of the Royal College of Surgeons, the Royal Free Hospital School of Medicine and the Institute of Neurology; and to these institutions for giving me bench space and help with my original work; to Rita Farrell for her guidance and work on the early stages of the original manuscript; to Gloria Prosper who contributed to the early formation of the extensive Bibliography; and to the National Institutes of Health for the

post doctoral research grant which made it possible for me to find the time to further my own research and to write the first edition of this book.

Recently, my own career in the arts, science, business, healing, and spirituality led me to look for a way to bring my various *hats* under one large umbrella. Often we find what we are searching for in places where we are not looking, and this happened to me. As fate would have it, I attended an intriguing course on energetic healing taught by Louise Mita. Thus began the understanding of how all my hats could, and have, fit under the umbrella of energy work. Energy work and healing have strengthened and encompassed every aspect of my previous study, enlarged my already great curiosity, and sent me on a journey to find out even more. The excitement of learning, growing, and of sharing this knowledge is part of my mission to help singers, their teachers, and professionals who work with singers. For this added energy and joy of new adventure at this time in my life, I thank you, Louise Mita. Finally, I express my profound gratitude to Jane Vukovic for her support in every way over the past thirty years.

January 2009, Lake Annecy, France

Meribeth Dayme, PhD

Contents

1 Introduction	1
Core singing	1
Key issues in singing today	3
a) The approach to teaching and learning	3
b) The language of the mind	4
c) Developing talent	5
d) Learning to trust the voice	6
e) Awareness and responsibility	6
2 The human energy field and singing	8
Defining the human energy field	8
Components of the human energy field	9
Invisible aspects of the energy field	10
a) Mental aspects	10
b) Emotions	11
c) Psychological influences	13
d) Psychic aspects	13
e) Spiritual aspects	14
f) Physical aspects	14
Singers as masters of their own energy fields	15
a) Take responsibility for learning	15
b) Take responsibility for thoughts and language	15
c) Pay mindful attention to each practice and lesson	15
d) Treat all colleagues, peers and teachers with respect	16
e) Be centered and aware	16
3 Vocal pedagogy in the 21st Century	17
Working with the <i>Whole</i> student	18
Right – left brain balance in teaching and learning	18
Co-responsibility in learning and the establishment of trust	20
Use of language that enriches teaching and learning	21
Self-development as the core of teaching and learning	22
The responsibility of the teacher	23
a) Continue to be a lifelong student	23
b) Learn to coach the mental aspects of performance	24

c) Create a positive studio atmosphere for learning and performing by having a physical, mental, emotional and spiritual safe haven for every student	24
d) Be grateful for each student	25
e) Be professional about the business of singing	25
The responsibility of the student	27
a) Objectivity	27
b) Extra-curricula development complementary to singing	27
c) Elimination of mind chatter and excessive self-criticism	28
d) Meaningful practice and rehearsal	28
e) Find ways to monitor progress	29
f) Have the courage to take performance risks	29
g) Be grateful for your talent	29
The future of vocal pedagogy	29
4 What every singer needs to know: Co-ordination, spontaneity and artistry	31
Co-ordination	32
Spontaneity	33
Artistry	37
a) Love of singing	37
b) Dedication to the work of singing	37
c) Individuality	37
d) Emotional involvement	38
e) Personality and magnetism	38
f) Performance that transcends the ordinary	39
On becoming a dynamic singer	39
5 The role and function of the voice: an overview	43
Communication	43
Psychological factors	45
Physiological factors	46
Acoustic and environmental factors	47
Psychological factors of communication	48
Physiological factors	50
Acoustic factors	52
Perception	53
6 Posture and breathing in singing	56
Posture and physical alignment	56
Respiration	63
Quiet respiration	64
Inspiration	65
a) The diaphragm	68

b) The intercostal muscles	71
c) Other muscles of inspiration	77
Expiration	79
a) The abdominal muscles	79
b) Other muscles of expiration	84
Subglottic pressure	84
Summary: breathing for singing	86
7 Phonation	89
The anatomy of the vibratory mechanism	90
The function of the vocal folds in singing	102
The onset of sound	103
Neurological factors of phonation	105
Physiological factors of phonation	105
Pitch	106
Range	107
Vibrato	108
Registers	109
Subglottic pressure and vocal intensity	113
Summary	114
8 Resonance and vocal quality	116
The anatomy and physiology of the pharynx	119
a) The constrictors	121
b) the relatively slender longitudinal muscles which shorten the length of the pharynx	121
c) The muscles of the soft palate	123
A summary of the acoustics of the vocal tract	126
Vowel formation	130
Vocal quality	136
Factors which affect vocal quality	136
(1) Overly active facial muscles	136
(2) The position and movement of the lower jaw	137
(3) Rigidity of the tongue	138
(4) Tension in the neck	138
(5) Tension in the chest	138
(6) Emotional tension	138
Focus and intensity	139
Some misconceptions regarding resonance	142
Conclusion	144
9 Articulation	145
Vowels and consonants: a summary	145
a) Vowels	145

b) Consonants	146
The mechanism of articulation	147
Anatomical aspects of articulation	148
Fixed structures	148
Movable structures	148
a) The mandible	148
b) The lips	151
c) The tongue	152
Summary	155
10 Vocal health	157
General health and nutrition	157
Hoarseness	159
a) Allergies	160
b) Respiratory disease	160
c) Vocal misuse	161
d) Hoarseness of psychogenic origin	164
Drugs	165
Smoking	166
Special vocal problems of women	166
Surgical procedures pertinent to singers	167
Singers and their doctors	169
Complementary health professionals available to singers	170
Care of the voice	170
11 Research in singing	173
New areas of potential research in singing	174
The limitations of our current research	175
Areas for the adventurous to investigate	176
Summary: Exciting possibilities ahead	177
12 Appendices	178
A. Classification of singers for research	179
a) Categories of singers	179
b) Classification Chart	180
B. Study Outlines for Vocal Anatomy	184
1) Introductory notes on anatomy	184
2) Notes about muscle tissue	186
3) Muscle action and terms of movement	187
4) Respiration	189
5) Phonation – the larynx	191
6) Pharynx and soft palate	195
7) Soft palate	197
8) Muscles of mastication	198

Contents	XV
9) The tongue	200
10) Muscles of facial expression	202
References	205
Author index	219
Subject index	221