

Voice Therapy

Clinical Case Studies

Fourth Edition

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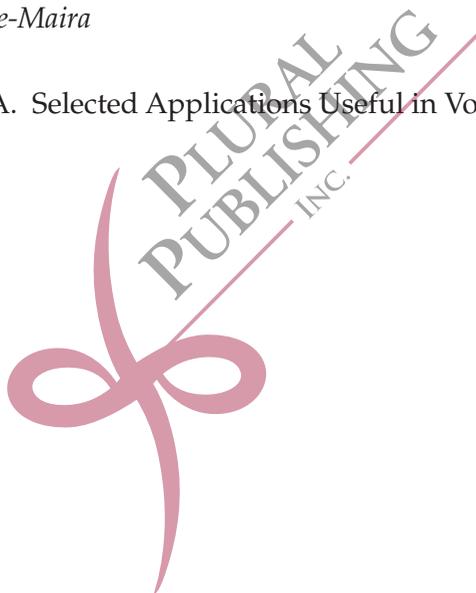
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Preface

The fourth edition of *Voice Therapy: Clinical Case Studies* marks the 20-year anniversary of this text. We are excited to introduce Edie Hapner as co-editor of this fourth edition. Hapner's clinical and research contributions to the field of voice pathology are recognized nationally and internationally. She is a master clinician and a teacher and mentor to a generation of voice clinicians. We are pleased to have Edie on board and know that her contributions will enhance the quality of the learning experience for voice students and professionals alike.

Since its initiation, the purpose of this text has remained the same:

... to provide both the student and the working clinician with a broad sampling of management strategies as presented by master voice clinicians, laryngologists, and other voice care professionals. The text is meant to serve as a practical adjunct to the more didactic publications.

As the knowledge of voice production continues to expand, so, too, have the publications dedicated to describing this knowledge. There are currently excellent texts and journals dedicated to the scientific understanding of voice. Other publications are available to help prepare students to evaluate and manage clinical voice disorders. By necessity, these texts must include great quantities of didactic information so that the student learns not only "how" but "why." To utilize a management approach without understanding the underlying basis of the approach is inappropriate.

Nonetheless, because of the breadth of material necessary in these texts, therapeutic methods for voice disorders are often given only a cursory and generalized discussion. This text is meant to bridge that gap. In over 60 case studies involving a wide variety of voice disorders with various pathologies and etiologies, master clinicians have provided detailed descriptions of management approaches and techniques. It is our hope that the expertise offered in these pages will serve the reader well in guiding clinical practice.

Utilizing the format of actual case studies, complete descriptions of diagnostic and therapeutic methods are provided for a full array of voice disorders. Chapter 1 includes information on the various philosophies of treatment. With the maturation of the voice care specialty, different schools of thought have evolved regarding treatment designs. These philosophical orientations include hygienic, symptomatic, psychogenic, physiologic, and eclectic orientations. Each orientation is discussed and illustrated with a representative case study.

Chapter 2 comments on various voice evaluation techniques. These techniques include the formal questionnaire, the patient interview, perceptual voice analysis, patient self-assessment, and instrumental assessment of voice production. The role of the evaluation process as a part of the overall management plan is also discussed.

Chapter 3 discusses treatment approaches for the most common type

of voice disorder, muscle tension dysphonia (MTD). Following an overview of MTD by Nelson Roy, management approaches for both children and adults including hygiene programs, symptomatic modifications, attention to psychosocial issues, and direct physiologic manipulation and exercises are presented in illustrative case studies of both primary and secondary MTD.

Treatments for various etiologies of glottal incompetence are described in Chapter 4. Management for voice fatigue, bowed vocal folds, senile laryngitis, and vocal fold paralysis are described, including direct voice therapies, surgical intervention, and a combination of these approaches. Many techniques including voice facilitating techniques, semi-occluded vocal tract, expiratory muscle strength training, and phonation resistance training are discussed.

Chapter 5 presents management strategies for laryngeal dystonia, essential tremor, and other neurologic voice disorders. These strategies include behavioral and medical management of spasmodic dysphonia, voice therapy for essential tremor, and face-to-face and remote treatment of voice and speech symptoms related to Parkinson disease.

Because of the speech-language pathologist's unique blend of knowledge regarding upper respiratory anatomy and physiology and behavioral therapy, we have become the caregivers for complex respiratory and laryngeal disorders. Chapter 6 provides several detailed case studies regarding the various etiologies, patient profiles, and evaluation and treatment approaches used with those diagnosed with irritable larynx syndrome. Included in this category are chronic cough and vocal cord dysfunction (VCD). These cases

include treatments for laryngopharyngeal reflux and VCD in the young child, young athlete, and elite athlete.

The consequences of a voice disorder may impact the quality of life and threaten the livelihood of individuals dependent upon a healthy voice. Chapter 7 presents case studies for those dependent upon their voice such as the elite vocal performer, the occupational voice user, and those whose avocational voice use is related to their quality of life.

The final chapter, Chapter 8, is devoted to a discussion of successful voice therapy and patient adherence. What makes therapy successful or unsuccessful? This chapter looks at both the therapist and the patient and describes the pitfalls that may influence the ultimate goal of therapy: improved vocal function.

As with the first three editions of *Voice Therapy: Clinical Case Studies*, the most exciting element in the preparation of this text was the support received by the master clinicians who graciously and generously submitted the case studies. What a wonderful opportunity it is to learn from those who are in the trenches, those experts who embody not only superior clinical skills, but wonderful insight as to why they do what they do. We are deeply indebted to all of them and proudly offer their collective expertise. We are certain that the reader will benefit from their vast clinical experiences.

Text preparations are extremely time-consuming and require many hours of tedious work. Checking and preparing references, organizing tables, figures, and their legends, reading and re-reading in an attempt to make the intent clear to those we are trying to reach are only a few of the tasks involved. We were so very fortunate in the prepara-

tion of this text to have the invaluable editorial assistance of the Plural Publishing professionals. We are indebted to Angie Singh, Megan Carter, Milgem Rabanera, and Mckenna Bailey for encouraging and supporting this fourth

edition. In addition, we wish to thank our students and colleagues who have suggested ways to improve the text with each new writing. Finally, as usual, we are most appreciative for the support of our families.

—Joseph C. Stemple
Edie R. Hapner





Principles of Voice Therapy

Introduction

In preparing the fourth edition of this text, it was necessary to review almost 80 years of history related to voice therapy techniques and approaches. It is a rich and interesting history that gives an excellent understanding of how the treatment of voice disorders has grown and evolved to our present practice. Some of the therapy approaches developed by early speech pathologists continue to be used successfully in the remediation of voice disorders to this day. Because of the growth in our knowledge and understanding of voice production, other therapy approaches once commonly used were proven to be ineffective. The past 30 years have yielded tremendous growth in our knowledge and understanding of vocal function. Computer models of phonation,¹⁻⁶ histologic studies of the vocal folds,⁷⁻¹⁰ analysis of the vocal fold cover and tissue engineering,¹¹⁻¹⁹ and genetic issues

associated with voice disorders²⁰⁻²³ are but a few of the many advances in voice science. Furthermore, consider the rapidly evolving ability to measure and describe normal and pathologic voice function objectively through sophisticated acoustic and aerodynamic instrumentation, as well as the ability to observe vocal fold vibration. All of these scientific advancements have provided voice clinicians with the tools to confirm the efficacy of their approaches.

The number of traditional therapy approaches that continue to be used in voice therapy today is a strong statement of appreciation and admiration for the voice pedagogues, clinicians, and scientists of earlier days. The accuracy of their practical observations regarding voice function has proved to be uncanny. The efficacy of many of these traditional voice therapy techniques is now being tested through systematic outcomes research.²⁴ Proof of the usefulness of many of these techniques, however, has been well established by

the clinical results of skilled speech-language pathologists.

The major difference in voice therapy today compared with even 20 to 25 years ago is the ability to diagnose a problem quickly and accurately and to confirm the efficacy of our management approaches through objective measures. These objective measures may also be used as patient feedback during the therapeutic process. Although our management approaches have changed over the years, voice therapy remains a blend of science and art.

The *scientific* nature of voice therapy involves the clinician's knowledge of several important areas of study. These areas include the anatomy and physiology of normal and pathologic voice production; the nuances of laryngeal pathologic conditions; the acoustics and aerodynamics of voice production; and the etiologic correlates of voice disorders, including patient behaviors, medical causes, and psychological contributions:

- When considering the voice, we are considering the most widely used instrument on earth.
- To understand the voice disorder, we must understand the instrument's physical structure and functional components.
- We must have the skills to measure these components objectively and to relate these measures to our management choices.
- In addition, we must possess a broad knowledge of the common causes of voice disorders and the nuances of laryngeal pathologic conditions.

The *artistic* nature of voice therapy is dependent on the human interaction skills of the clinician. Compassion,

understanding, empathy, and projection of credibility, together with listening, counseling, and motivational skills are essential attributes of the successful voice clinician. Philosophically, we might make these statements about the artistic nature of voice:

- When considering the voice, we must consider the whole person.
- To examine a voice disorder is to examine a unique individual.
- The feelings of that individual, both physical and emotional, may be directly reflected in the voice.
- To remediate a voice disorder, we must have the skills to counsel and motivate the patient and empower readiness for change.

The successful voice clinician will combine attributes of the artistic approaches toward voice therapy with the objective scientific bases to identify the problem and then plan and carry out appropriate management strategies. Nonetheless, possession of a solid base of didactic information augments experience. Experience continues to teach even the masters. It is hoped that the experiences of others provided in this text will prove helpful in the development of superior voice clinicians.

Historical Perspective

In examining the evolution of the treatment of voice disorders, we find it was not until around 1930 that a few laryngologists, singing teachers, instructors in the speech arts, and a fledgling group of speech correctionists became interested in retraining individuals with voice disorders. This group used drills

and exercises borrowed from voice and diction manuals designed for the normal voice in an attempt to modify disordered voice production. Many of these rehabilitation techniques were and remain creative and effective, but they were not necessarily based on scientific principles. The “artistic” portion of voice treatment was the strong point of early clinicians.

Out of this artistic approach came the general treatment suggestions of: (1) ear training, (2) breathing exercises, (3) relaxation training, (4) articulatory compensations, (5) emotional retraining, and (6) special drills for cleft palate and velopharyngeal insufficiency.^{25,26} These treatment suggestions became the foundation of vocal rehabilitation.

Several general management philosophies have arisen from the early foundations of voice rehabilitation. These philosophical orientations are based primarily on the clinician’s mindset and previous training regarding voice disorders that directs the management focus. For the sake of discussion, we classify these management philosophies as:

- hygienic voice therapy
- symptomatic voice therapy
- psychogenic voice therapy
- physiologic voice therapy
- eclectic voice therapy

In short, *hygienic voice therapy* focuses on identifying inappropriate vocal hygiene behaviors, which then are modified or eliminated. Once modified, voice production has the opportunity to improve or return to normal. *Symptomatic voice therapy* focuses on modification of the deviant vocal symptoms identified by the speech-language pathologist, such as breathiness, low pitch, glottal

attacks, and so on. The focus of *psychogenic voice therapy* is on the emotional and psychosocial status of the patient that led to and maintains the voice disorder. The *physiologic orientation* of voice therapy focuses on directly modifying and improving the balance of laryngeal muscle effort to the supportive airflow, as well as the correct focus of the laryngeal tone. Finally, the *eclectic approach* of voice therapy is the combination of any and all of the previous voice therapy orientations.²⁷

None of these philosophical orientations are pure. Much overlap is present, often leading to the use of an eclectic approach. With this introduction, let us examine the orientations of voice therapy in greater detail.

Hygienic Voice Therapy

Hygienic voice therapy often is the first step in many voice therapy programs. Many etiological factors contribute to the development of voice disorders. Poor vocal hygiene may be a major developmental factor. Some examples of behaviors that constitute poor vocal hygiene include shouting, talking loudly over noise, screaming, vocal noises, coughing, throat clearing, and poor hydration. When the inappropriate vocal behaviors are identified, then appropriate treatments can be devised for modifying or eliminating them. Once modified, voice production has the opportunity to improve or return to normal.

Poor vocal hygiene may also include the habitual use of inappropriate pitch or loudness, reduced respiratory support, poor phonatory habits (glottal attacks, fry), or inappropriate resonance. Functional inappropriate use of

these voice components may contribute to the development and maintenance of a voice disorder. Hygienic voice therapy presumes that many voice disorders have a direct behavioral cause. This therapy strives to instill healthy vocal behaviors in the patient's habitual speech patterns. Good vocal hygiene also focuses on maintaining the health of the vocal fold cover through adequate internal hydration and diet. Once identified, poor vocal hygiene habits can be modified or eliminated leading to improved voice production.

Symptomatic Voice Therapy

Symptomatic voice therapy was a term first introduced by Daniel Boone.²⁸ This voice management approach is based on the premise that modifying the symptoms of voice production including pitch, loudness, respiration, and so on, will improve the voice disorder. Once identified, the misuses of these various voice components are modified or reduced using *voice therapy facilitating techniques*.

In the voice clinician's attempt to aid the patient in finding and using his best voice production, it is necessary to probe continually within the patient's existing repertoire to find the best one voice which sounds "good" and which he is able to produce with relatively little effort. A voice therapy facilitating technique is that technique which, when used by a particular patient, enables him easily to produce a good voice. Once discovered, the facilitating technique and resulting phonation become the symptomatic focus of voice therapy . . . This use of a facilitating technique to produce a

good phonation is the core of what we do in symptomatic voice therapy for the reduction of hyperfunctional voice disorders.^{28(p11)}

Boone's original facilitating approaches included:

1. altering of tongue position
2. change of loudness
3. chewing exercises
4. digital manipulation
5. ear training
6. elimination of abuses
7. elimination of hard glottal attack
8. establishment of a new pitch
9. explanation of the problem
10. feedback
11. hierarchy analysis
12. negative practice
13. open mouth exercises
14. pitch inflections
15. pushing approach
16. relaxation
17. respiration training
18. target voice models
19. voice rest
20. yawn-sigh approach

Many if not all of these facilitators remain useful and popular in the treatment of voice disorders and are described in greater detail in cases throughout this text.

The main focus of symptomatic voice therapy is direct modification of vocal symptoms. For example, if the patient presents with a voice quality characterized by low pitch, breathiness, and hard glottal attacks, then the main focus of therapy is to directly modify the symptoms. The facilitating approaches used to modify these symptoms might include explanation of the problem, ear training, elimination of hard glot-

tal attack, and respiration training. The speech-language pathologist constantly probes for the “best” voice and attempts to stabilize that voice with the various, appropriate facilitating techniques. Symptomatic voice therapy assumes voice improvement through direct symptom modification.

Psychogenic Voice Therapy

Early in the study of voice disorders, the relationship of emotions to voice production was well recognized. As early as the mid-1800s, journal articles discussed hysteric aphonia.^{29,30} West, Kennedy, and Carr²⁶ and Van Riper²⁵ discussed the need for emotional retraining in voice therapy. Murphy³¹ presented an excellent discussion of the psychodynamics of voice. Friedrich Brodnitz,³² as an otolaryngologist, was uniquely sensitive to the relationship of emotions to voice. These early readings are most interesting and remain informative to those treating voice disorders.

Our understanding of psychogenic voice therapy was further expanded by Aronson,³³ Case,³⁴ Stemple,³⁵ and Colton and Casper.³⁶ These authors discussed the need for determining the emotional dynamics of the voice disturbance. Psychogenic voice therapy focuses on identification and modification of the emotional and psychosocial disturbances associated with the onset and maintenance of the voice problem. Pure psychogenic voice therapy is based on the assumption of underlying emotional causes. Voice clinicians, therefore, must develop and possess superior interview skills, counseling skills, and the skill to know when the treatment

for the emotional or psychosocial problem is beyond the realm of their skills. A referral system of support professionals must be readily available.

Physiologic Voice Therapy

Physiologic voice therapy includes voice therapy programs that have been devised to directly alter or modify the physiology of the vocal mechanism. Normal voice production is dependent on a balance among airflow, supplied by the respiratory system; laryngeal muscle balance, coordination, and stamina; and coordination among these and the supraglottic resonatory structures (pharynx, oral cavity, and nasal cavity). Any disturbance in the physiologic balance of these vocal subsystems may lead to a voice disturbance.³⁷

These disturbances may be in respiratory volume, power, pressure, and flow. Disturbances also may manifest in vocal fold tone, mass, stiffness, flexibility, and approximation. Finally, the coupling of the supraglottic resonators and the placement of the laryngeal tone may cause or may be perceived as a voice disorder. The overall causes may be mechanical, neurologic, or psychological. Whatever the cause, the management approach is direct modification of the inappropriate physiologic activity through exercise and manipulation.

Inherent in physiologic voice therapy is a holistic approach to the treatment of voice disorders. They are therapies that strive to at once balance the three subsystems of voice production as opposed to working directly on single voice components, such as pitch or loudness. Examples of physiologic voice