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THE CHILD SINGING VOICE AS SOCIAL CONSTRUCT: PHYSIOLOGICAL, PEDAGOGICAL AND SOCIOLOGICAL PERSPECTIVES

by

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Introduction

The human singing voice embodies and reflects the culture that surrounds it. It can be creative and original, but it also imitates and mirrors the predominant society or culture in which it resides. Because childhood is a stage or time of life created within a societal framework, the child singing voice can consequently be considered a reflection of childhood within society. As Western society changes, so do attitudes toward Western children and their childhoods; therefore, perceptions of the child singing voice change alongside shifting attitudes toward children and childhood within society.

This study seeks to define the shifting nature of the child voice, examining changing attitudes toward child vocal pedagogy and ideal vocal tone. Often considered the "true" or "authentic" voice of children, the sound of children singing with pure "head" voice has been accepted as the fixed sound ideal within the Western classical music canon for nearly two hundred years. Adherence to this canonic sound ideal through the exclusive development of head tone singing has recently been considered "vocal fundamentalism" (Woodford, 1999). As a result, in the last decades of the twentieth century and early twenty-first, both child vocal pedagogy and sound ideal are being challenged by acceptance of lower vocal register, or "chest" voice.

Background and Nature of the Study

This study was prompted initially by observations concerning the vocal range of children's music published in solo and choral settings. In comparison with music published in the early to mid- twentieth century, a general trend to publish music for children in lower keys was noted from the mid- twentieth

century onward. In addition to choral and solo music for children set in lower keys, it seemed publishers were distributing music for school use that also explored extremely low tessituras. I began to wonder if popular music was actually influencing this tendency or if popular music was experiencing the same "downward" trend.

Accompanying these simple observations, I became increasingly aware of my own reaction in response to this trend as well as those of other music educators. Many classically trained music educators (myself included) considered this trend to be symptomatic of general societal malaise in the West—a "dumbing down" of children's singing. What was even more surprising to me was the realization that there were esteemed music educators who politely labeled the lower register "different" rather than adhering to long-held assumptions that the lower register was "bad," "coarse," or "uncultured." Not only did there seem to be a change in the vocal range and repertoire, there also seemed to be different attitudes toward teaching children to sing.

The following chapters document my search for the "true" nature of child singing voice. At the outset of this research project, my primary objective was to prove that the head voice was "the" singing voice of the child; however, my investigation yielded results that challenged many views I had held firmly prior to this research.

Discussion is limited to three important perspectives. Chapter One will present a *physiological* view that:

1. reviews the basic workings of the vocal mechanism,

2. compares and contrasts the pediatric and adult larynges from both historical and contemporary research,
3. discusses vocal range and vocal registers from historical and contemporary viewpoints, and
4. discusses upper register, lower register and belt voice sound production.

Chapter Two will present a *pedagogical* view that:

1. traces historical approaches to child vocal pedagogy and methodology, considering both upper and lower register development,
2. discusses current pedagogical approaches for the development of solo and choral singing,
3. examines repertoire for children in the form of graded music series and choral music, citing important considerations concerning vocal range and registers, and
4. examines popular music available for children in an audio-visual format, citing important considerations concerning vocal range and registers.

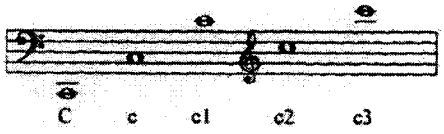
Supported by physiological and pedagogical material cited in Chapters One and Two, Chapter Three presents a *social perspective* that:

1. draws striking parallels between perceived notions of the child singing voice and child sociology and the history of childhood,
2. examines symbolic and representational notions connected with the child singing voice, and

3. reviews the nature of the child singing voice in relation to adult control and other dominant cultural influences.

Definition of Terms

As Chapters One, Two and Three deal with three extremely different perspectives, a separate set of terms will be presented in each chapter. Please note that, unless within a quotation cited from another source, pitches will be referred to in accordance with the following designations:



CHAPTER ONE

Physiological Perspectives

This chapter examines the child voice, vocal range and vocal registers from a physiological perspective. It presents historical and contemporary views concerning basic physiology and anatomy of the vocal apparatus and reviews literature concerning vocal range and vocal registers written by leading experts in the field of child vocal pedagogy from the mid-nineteenth century to the present. Finally, it will discuss the physical processes involved in sound production for upper and lower registers, as well as of a singing technique, commonly referred to as "belt technique," unique to twentieth century popular music and some non-Western musics.

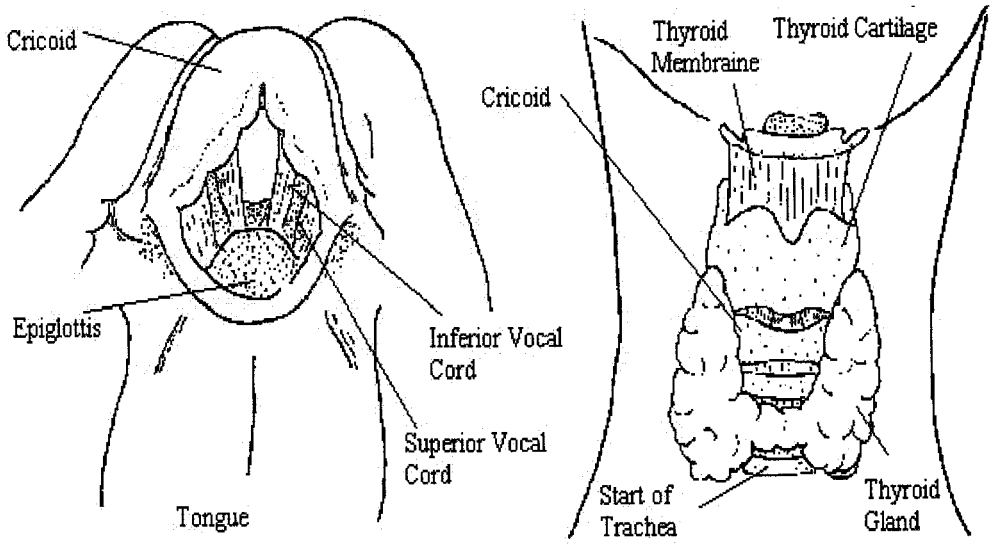
Vocalization in the upper register, lower register and belt voice require different mechanical adjustments within the larynx. It is therefore important to establish a firm physiological foundation to fully understand each vocal process. Chapter One defines the child voice from a seemingly objective physiological perspective; however, as shall be seen in Chapters Two and Three, the use and sound of these different vocal registrations generate a multitude of subjective attitudes and opinions.

Basic Structures and Functions of the Vocal Apparatus

The organs directly involved in the act of singing for both adults and children can be separated into three groups assigned to three different functions: (See Figure 1.)

1. the larynx—directly responsible for the production of sound (phonation)
2. the respiratory system—responsible for breath which creates the sound
3. the resonators—responsible for the amplification of the sound produce

Figure 1. The Larynx: Superior and anterior perspective.



Note. From "Larynx (diagram)," *Patient UK*. Retrieved June 16, 2004 from http://www.patient.co.uk/. Copyright 1997-2004 by EMIS and Patient Information Publications (2004). Reprinted with permission.

Housed in the throat, the larynx consists of cartilage, ligament, muscle and mucous membrane. The vocal folds are housed and protected here. The larynx serves two important functions:

1. providing protection of the lungs by keeping food from entering the respiratory tract, and
2. phonation

The Larynx

In 1845, Manuel García invented the laryngoscope; an instrument which provides an internal view of the vocal apparatus. This invention marked the beginning of a new era in vocal science and pedagogy because the laryngoscope provides not only a complete view of the larynx, but enables observations of laryngeal functions of a living subject. Movements of the vocal folds during phonation have been studied through the use of

high-speed cinematography since 1940. The movements of the vocal folds in relation to higher and lower frequencies are described in *Gray's Anatomy* (1995):

> Preparatory to phonation, the intermembranous and intercartilaginous parts of the glottis are reduced to a linear chink by adduction of the vocal folds and by adduction and medial rotation of the arytenoids. The folds then tense, the degree of tension determining sound pitch (frequency). To raise the pitch, tension is increased; the folds may lengthen by 50% in the highest tones. Photographs suggest that this lengthening affects both ends of the folds as the cricothyroid muscles tilt the thyroid cartilage down and forwards.

Muscles and ligaments within the larynx regulate pitches produced by varying the length and thickness of the vocal folds. The cricothyroid, crico-arytenoid, arytenoid, thyroarytenoid and vocalis muscles are the principal muscles involved in phonation. The action of these muscles is clearly explained by Miller (1986):

> Laryngeal muscles function as abductors (openers), adductors (closers), tensors, and relaxers of the vocal folds. The arytenoids are separated by the abductor muscles at inspiration, and the abductors are opposed by the adductors, which close the glottis for phonatory function and for protection. The vocal folds are tightened and elongated by the glottal tensors. The tensor muscles are opposed by the relaxers, which shorten the vocal folds. (p. 252)

Appleman (as cited in Stofft, 1979 and in Miller, 1986) describes the action of the thyroarytenoid muscles, noting that they:

1. Relax and shorten the vocal ligament by drawing the arytenoids towards the thyroid cartilage for the singing of low pitches.
2. Draw the vocal processes of the arytenoids downward and inward, approximating the vocal folds.
3. Pull the vocal folds apart by their lateral contraction.
4. Become stabilized throughout their active length and, thereby, aid in raising the pitch of the phonated sound.
5. Vary both the length and the thickness of the vibrating segment.

6. Render a portion of the vocal fold tense while the remainder is relaxed. Thus, an elliptical opening between the vocal folds is maintained for the production of higher pitches. (Stofft, pp. 19-20; Miller, p. 253)

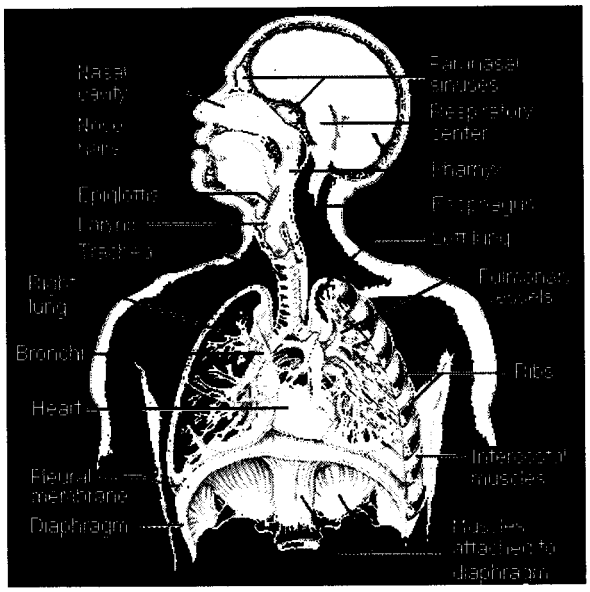
The Respiratory System

Respiration involves the inhalation and exhalation of air to and from the lungs. The anatomy of the respiratory system consists of the abdominal region, the thoracic (chest) region and the laryngeal region. (See Figure 2.) At the top of the respiratory system, the larynx houses the air passageway that leads to the lungs. The pharynx, or throat, is above the larynx and channels air into the larynx and to the lungs or food to the esophagus.

Inhalation and exhalation are controlled by the action of the diaphragm, i.e. the large, dome-shaped muscle that separates the abdominal cavity from the thoracic cavity. The diaphragm is the most important muscle for the breathing process. The action of the diaphragm is described by Gray (1995):

> During inspiration the lowest ribs are fixed, and contraction of the diaphragm draws the central tendon downwards. In this movement the curvature of the diaphragm is scarcely altered; the cupolae move downwards and a little forwards almost parallel to their original positions. The associated downward displacement of the abdominal viscera is permitted by the extensibility of the abdominal wall, but the limit of this is soon reached. The central tendon, its motion arrested by the abdominal viscera, then becomes a fixed point from which the fibres of the diaphragm continue to contract, elevating the lower ribs and through this action pushing forwards the body of the sternum and the upper ribs. . . . The balance between descent of the diaphragm and protrusion of the abdominal wall and elevation of the ribs varies in different individuals and with the depth of respiration. The thoracic element is usually more marked in females, but increases in both sexes during deep inspiration. . . . During inspiration, when the volume of the thorax increases the intrathoracic pressure decreases so that air flows through the respiratory passages into the enlarging alveoli, and in expiration the reverse processes occur.

Figure 2. The Respiratory System: Anterior perspective.



Note. From "AMA (Atlas) Respiratory System," *American Medical Association.* Retrieved June 21, 2004 from http://www.ama-assn.org/ama/pub/category/7166.html Copyright 1995-2004 by American Medical Association. Reprinted with permission.

For phonation in the manner of singing and speaking, exhalation must become more active as these activities utilize a greater intensity of muscular control than when the body is at rest.

The Resonators

Physical resonators are those spaces of the body that resonate from sound waves generated from the larynx. The main resonators are found in the following regions of the body:

1. the thorax (chest cavity)
2. the laryngeal cavities
3. the pharyngeal cavities
4. the oral cavity
5. the nasal cavity

6. the sinuses

The vocal tract consists of a curved tube formed by the throat, mouth and lips. The vocal tract is open at one end (the mouth) and closed at the other (the vocal folds). The size and shape of the vocal tract can be regulated. This flexibility of size and shape enhances or reduces the amount of resonance in the voice.

Physiology of the Child Voice

At any stage of life, humans share the same mechanical principles for the production of vocal tone; however, the vocal apparatus changes in size and flexibility as the body grows and matures. The larynx changes in size and configuration throughout infancy and childhood with the most dramatic transformation occurring during adolescence.

When comparing the adult larynx with that of an infant, Thurman and Welch (2000) cite specific differences. The proportions within the laryngeal structure differ greatly between an infant larynx and that of an adult. (See Figure 3.)

Figure 3. Comparison of child and adult larynges

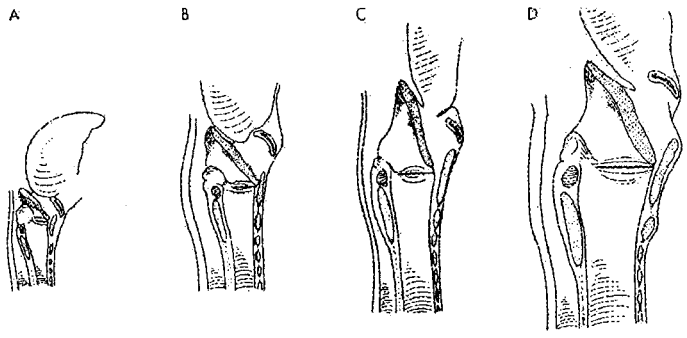


FIGURE 3.8 Comparison of newborn (A), child (B), and adult larynges (C and D). Note changes in the following areas: overall shape; size; separation of hyoid, thyroid, and cricoid; axes of epiglottis and vocal cords; size of arytenoids; and cricoid contour.

Note. Reprinted from *The larynx: A multidisciplinary approach*, M. Fried, Ed., The pediatric larynx, p. 30, Copyright (1996), with permission from Elsevier.

"Compared to adults, infant laryngeal cartilages are much smaller, more rounded than angular, softer and more pliable, more compact in their connection to each other" (Thurman & Welch, 2000, p. 699). The pliability of the child larynx is an important consideration which will be discussed further in Chapter Three.

When comparing the laryngeal region of adults and children externally, it is clear that the larynx is much more prominent in adults—especially the larynx of adult males. The obvious protrusion of the "Adam's apple" in males is thyroid cartilage. The growth of this cartilage occurs throughout a child's development.

The location of the larynx changes as the body matures. For example, at birth, the larynx is positioned between the third and fourth cervical vertebrae. At the age of five, the larynx is located opposite the seventh vertebrae and remains there until approximately age 20. The larynx gradually descends throughout a lifetime, creating a longer space in the vocal tract to the location of the larynx. This gradual lengthening in the vocal tract results in a lowering in the average pitch level of the voice (Sataloff & Spiegel, 1989).

The actual shape of the airway is different between that of a child and that of an adult. Eavey (1995) describes this difference in configuration:

> In the adult, the anatomy demonstrates a rather straight descent once over the base of the tongue. The angle of the epiglottis is more or less vertical and in similar alignment to the trachea. In the child, however, the actual configuration is more curved from the oral cavity through the hypopharynx and larynx into the trachea. (p. 26).

Reilly (1997) found that the laryngeal framework also changes as the child matures from a conical shape to a more cylindrical contour.

Eavey (1995) considers further physiological differences between the adult larynx and the child larynx, emphasizing flexibility: "The connective tissue composing the airway is

much more pliable than it will be later in life. Therefore, the normal pressures generated during respiration can exert a greater influence to deform the anatomy of the airway" (p. 26). Klein and Schjeide studied the lifetime of the larynx, stating that:

> at birth, it consists of very soft cartilage and connective tissue. It is as pliable as putty. By the time an individual has reached the age of ninety, practically all of this cartilage has ossified so that it is usually grossly inflexible. (as cited in Stofft, 1979, p. 66)

The dimensions of the larynx increase at a slow and steady rate during childhood. There is no significant difference between the larynx of a male and that of a female during this time. In addition to an increase in size, the larynx becomes firmer as it matures. The weight of the larynx also increases: "From prepuberty to adulthood, combined weight of the male thyroid, cricoid and arytenoid cartilages increased 10.60 grams and in females that increase was 3.93 grams" (Thurman & Welch, 2000, p. 700).

Within the larynx, the vocal folds change in size from birth to maturity. At birth the vocal folds are approximately three millimeters long. During infancy the average vocal fold length is approximately 6-8 millimeters. The vocal folds grow to approximately 9.5 millimeters by the age of six, when growth stops until the onset of puberty (Stofft, 1979). The folds are generally considered to be between twelve and fifteen millimeters in length during pubertal change. Although different studies reported a variety of results, the average length of adult male vocal folds reach seventeen to twenty-three millimeters while the adult female folds are found to be between 12.5 and seventeen millimeters (Thurman & Welch, 2000, p. 360).

Welch (2002) summarized the primary differences between adult and child vocal mechanisms, as well as differences between sexes:

> There are characteristic physical and (resultant) acoustic differences between children and adults. Compared to an adult, the child's vocal tissue has a slightly different (less developed) structure. For example:
>
> 1. the laryngeal cartilages are more plastic and less rigid
> 2. the membranous portion of the vocal folds in the newborn child and young child comprises less of the total vocal fold length in comparison to an adult
> 3. the inner structure of the vocal folds is different, with the young child having thinner mucosa, but a higher ration of mucosa thickness to membranous length than the adult
> 4. the adult multi-layered vocal fold structure is not consistently evidenced until the age of fifteen
> 5. the overall size of the vocal instrument is smaller (pp.104-105)
>
> The scientific, medical and clinical literatures indicate that there are marked anatomical, physiological, functional and acoustic differences between children and adults. Pre-adolescent boys and girls, however, although slightly different from each other in the physical dimensions of the vocal mechanism, tend to employ a similar range of vocal pitches for speech. It is only with the onset of puberty that the sexes diverge in their spoken pitch ranges. (p.106)

Of particular relevance to this paper are the physiological notions cited by Welch which include plasticity and homogeneity between sexes. These three ideas will be considered from a social perspective in Chapter Three.

Physiology of the Child Voice: Historical and Contemporary Views

As Chapter Three will reveal, attitudes toward children have changed throughout the centuries. This gradual metamorphosis is reflected not only in subjective disciplines such as sociology and education, but also in the seemingly objective area of anatomy and physiology. Concerns for pediatric care are documented in ancient civilizations (Sommerville, 1990); however, in the eighteenth and nineteenth centuries, discoveries in the areas of anatomy, physiology and the structure of cells contributed to a better understanding of human growth, development and decline (Steedman, 1995). Pediatric medicine was established. Publications devoted to child-rearing and childcare gained popularity; manuals concerning pediatric physiology and anatomy were published. The

application of scientific inquiry and subsequent technological advances played an integral role in this evolution of pediatric physiological awareness.

As a result of increased concern for the physical and mental well-being of children, child labour and educational laws were enforced. Western children of the nineteenth century were considered to be different from adults—the most obvious difference being a physiological one. Children were looked upon as delicate, fragile and vulnerable beings in need of protection. O'Malley (2003) writes of eighteenth century attitudes toward the cultivation of the bodies and minds of children: "Just as the frail bodies of children had to be conditioned toward hardiness through such regimens as exercise, simple diet, and light dress, their minds required fortification through stimulus." (p. 79)

Attitudes toward the health, protection, care, education and discipline of children's bodies changed significantly between the eighteenth and nineteenth centuries. According to James (2000):

> the explosion of health, welfare and educational reforms, which were the culmination of this rapid nineteenth century interest in children's bodies, led, by the early twentieth century, to physiological changes in those bodies. . . . Changing health practices, combined with a more general improvement in the social and economic conditions of their everyday lives . . . contributed to the changing physiology of children's bodies. . . . It was the active participation of parents (and their children) in new theories of childrearing and parentcraft, their acceptance of a particular envisioning of the importance of child health and their willingness to defer to or be the beneficiaries of reformist social policies which combined to effect a change in childhood morbidity through physiological change in children's bodies. (p. 26-27)

From a physiological perspective, Western children of today are considered to be healthier and stronger than their counterparts from the nineteenth and early twentieth centuries. Greater knowledge of nutrition and a greater abundance, availability and

variety of foods contributes significantly to the health and well being of children. In addition to health and strength, there is also evidence that children are reaching puberty at a younger age than in previous centuries (Lee, Guo & Kulin, 2001; Postman, 1994; Qaadri, 2002). This impacts the singing voice as research finds a positive correlation found between lower speaking pitches and lower singing ranges in post-menarcheal girls (Williams, 1990).

Adult attitudes toward the child body are strongly connected to attitudes toward the physical nature of the child voice. Physical descriptions of the child voice found in pedagogical manuals written in the nineteenth century provide excellent examples. Francis E. Howard was the first vocal pedagogue in North America to write about the mechanics of children's singing voices. First published in 1895, *The Child Voice in Singing* would, Howard hoped, provide teachers of singing with comprehensive information and advice based on the current study of anatomy and physiology of the larynx and vocal organs. Howard's precise and informed descriptions concerning the mechanics of the voice indicate that he had access to laryngoscopal technology.

Howard's description of the physiological nature of the prepubescent child voice emphasizes homogeneity, and the lack of rigidity of the laryngeal cartilages:

> the voices of boys and girls, prior to the age of puberty, are alike. The growth of the larynx, which in each is quite rapid up to the age of six years, then, according to all authorities with which the writer is conversant, ceases, and the vocal bands neither lengthen nor thicken, to any appreciable extent, before the time of change of voice, which occurs at the age of puberty. It is scarcely possible, however, that the larynx literally remains *unchanged* through the period of the child's life, extending from the age of six to fourteen or fifteen years. In point of fact, authorities upon the subject refer only to the lack of growth and development in *size* of the larynx during the period; but *undoubtedly, during these years, there is a constant gaining of firmness and strength, in both the cartilages and their connecting membranes and muscles.* The constant, though of course extremely slow, hardening of the cartilaginous portions of the larynx, and the steady increase

> in the strength of its muscles and ligaments is not in the least inconsistent with the previously noted fact, that the vocal bands during this time increase to no appreciable extent in length; for, it may be observed, after the change of voice, which often occurs with great rapidity, and during which the vocal bands increase to double their previous length in males, that, though the pitch of the voice, owing to increased length of the bands, suddenly lowers, yet not until full maturity is reached do the laryngeal cartilages attain that rigidity, or the vocal bands that ready elasticity essential to the production of pure, resonant voice. Yet, during these years, while the voice is developing, the vocal bands remain unchanged in *length*. . . . The voice, at the age of eleven or twelve, is far stronger, and is capable of more sustained effort than at the age of six or seven years, and, for the year or two preceding the break of voice, the brilliance and power of boys' voices, especially in the higher tones, is often phenomenal, and in all cases is far superior to that of previous years. (pp. 19-20)

Howard also compares adult and child vocal folds, frequently referring to the fragility of the vocal mechanism:

> The vocal bands of adults vary largely in length, thickness, and breadth, as is shown in their widely varying pitch and tone characteristics, in both speech and song. The vocal bands of children are, however, much more alike in length and size, as is shown in their almost absolute homogeneity of pitch and tone quality in singing. (1898, p. 9)

> As the vocal mechanism of a child is weak and delicate, it seems to be a good idea for pupils, especially in primary and lower intermediate grades, to use the voice lightly . . . throughout their entire range or compass, that is, on low as well as on high tones. (1897, p.5)

> Picture yourself the short, thin, weak vocal bands of a child of six or seven years attached to cartilaginous walls so devoid of rigidity in that dreaded disease of childhood—croup—they often collapse. That is not an instrument for the production of tones in the contralto compass. (1898, pp. 74-75)

The work of Howard and his nineteenth century contemporaries deeply influenced attitudes concerning the fragility of the child larynx to the present day. Behnke and Brown (1885) state:

> It is obvious that the [child] vocal apparatus should be treated with the greatest gentleness, and that no strain should be laid upon it, either with regard to pitch, loudness, or length of sustained tones; and it is quite clear that the treatment of children's voices must vary according to circumstances, and chiefly with regard to years. (as cited in Stofft, 1979, pp. 77-78).

Rix (1910) considers "the larynx of the young child as a *tender* [italics added] instrument, and is not adapted to violent vocal effort . . . as he grows older the child's laryngeal cartilages and muscles grow firmer and stronger, and the voice gains correspondingly in power" (p. 7).

Nearly a century later, strenuous technical exercises for young, developing voices are still not encouraged. According to Sataloff and Spiegel (1989):

> such exercises may be damaging, especially to *fragile*, young voices. . . . Children have constantly changing voices with *delicate* muscles and *fragile* mucosa. . . . Its special *delicacy* and rapid changes during youth warrant extreme care and respect. So long as one remembers that children are children, and treats their voices within limits imposed by their bodies and minds, safe, educated singing should be possible at almost any age [italics added]. (pp. 35-37)

Phillips (1992) recommends that:

> Vocal-music teachers generally recognize that vocal abuse is a common occurrence among children and adolescents. The loud, boisterous yelling commonly found on the playground and at sports events is a way of life to which students have become accustomed. Little do students realize how *delicate* [italics added] the vocal mechanism is or how much potential damage there is in misuse of the voice. (p. 91)

Ashmore (1995) concurs with Phillips, stating that "teachers must keep in mind that children's voices are *delicate*" [italics added] (p. 180); however, research by Thurman and Welch (2000) indicates that the child voice is more durable and resilient:

> Our firm conviction is . . . that *all* [italics added] human beings who have normal anatomy and physiology for voicing are capable of a very wide variety of voice co-ordinations that can produce a very wide array of voice qualities, volumes, pitches, and timings with vocal safety. (p. 785)

The increased durability of children's voices in the twenty-first century may not only be related to increased strength and health of Western children today but to adult perceptions as well. It is important to note that the quotation of Welch cited above

refrains from describing the child voice as delicate or fragile. This changing perspective will be discussed further in Chapter Three.

Vocal Registers

Theories regarding vocal registers have been discussed by singers, pedagogues and physicians as early as the 13th century (Large, 1973; Thurman, 1999). With the aid of the laryngoscope in the nineteenth century, Manuel García defines "register" as:

> a series of succeeding sounds of equal quality on a scale from low to high produced by the application of the same mechanical principle, the nature of which differs basically from another series of succeeding sounds of equal quality produced by another mechanical principle. (as cited in Large, 1973, p. 8)

Garcìa observed the physiological nature of register changes through his observation of laryngeal activity.

A pre-scientific definition of vocal registers from 1923 considers the sensations produced by chest and head registers as well as the registral shifts found in both trained and untrained singers:

> The concept of register is understood to be a series of consecutive, similar vocal tones which the musically trained ear can differentiate at specific places from another adjoining series of likewise internally similar tones. Its homogeneous sound depends on a definite, invariable behavior of the harmonics. These rows of tones correspond to definite objectively and subjectively perceptible vibration regions on the head, neck and chest. The position of the larynx changes more in a natural singer during the transition from one such series of tones to another than in a well-trained singer. The registers are caused by a definite mechanism (belonging to that register) of tone production (vocal fold vibration, glottal shape, air consumption), which allows for a gradual transition however from one into an adjoining register. A number of these tones can actually be produced in two overlapping registers but not always with the same intensity. (Nadoleczeny, as cited in Large, 1973, p. 8).

Physiological events for vocal registration connect the action of the thyroarytenoid musculature with lower tones, the "chest" voice, or "heavy" mechanism,

and the cricothyroid musculature with higher tones, the "head" voice, or "light" mechanism (See Fig. 1). This musculature regulates the length of the vocal folds. Lengthening and thinning of the vocal folds produces higher tones while shortening and thickening of the folds produces lower tones (Miller, 1986). Upper and lower register laryngeal events are precisely described by Van Den Berg (1962):

> At the highest pitches, i.e. at the largest elongations, only the margins of the vocal folds are seen to vibrate. The vibratory pattern is defined by the longitudinal tension in the vocal ligaments and these ligaments behave almost like strings under these conditions. . . . The longitudinal tension in the vocal ligaments is brought about by the contraction of the crico-thyroid muscles and counteracted by the contraction of the vocalis muscles. To achieve the maximum tension in the vocal ligaments, i.e. the highest pitches, the crico-thyroid muscles should thus contract maximally, whereas the vocalis muscles should yield. (pp. 94-95)

> At the other extreme end we find the chest register, defined by negligible longitudinal tensions in the vocal ligaments and various degrees of longitudinal tension in the vocal muscles. The vibrational amplitude of the vocal folds is not restricted by the ligaments, massive vibrations are allowed and the characteristic chest voice response originates. The adjustment of the arytenoids is important, but the flow of air and particularly the degree of contraction of the vocalis muscles dominate the response. The pitch increases at increasing medial compression, flow of air and/or contraction of the vocalis muscles. Contraction of the vocalis muscles decreases the length of the vocal folds and at larger degrees of contraction this needs to be counteracted by proper contraction of the crico-thyroid muscles. (pp. 94-95)

Music educators, vocal pedagogues and researchers throughout history have held diverse opinions regarding the number of registers that comprise the adult vocal range, varying from one all encompassing register to seven distinct registers (Large, 1973). As applied to children's voices, historical research reveals a variety of opinions.

Howard (1897) describes the action of the vocal folds within a two-register philosophy:

> When the vocal bands of the child are used lightly, the soft, thin, and flutey tone which is heard is called the head tone or head voice: It is produced by the vibration of only a part of the substance of vocal bands. The chest voice which

> sounds louder, thicker, and rather reedy in quality is produced by fuller, larger vibrations at the vocal bands. (p. 5)

In *Voice Training for School Children*, Rix (1910) concedes "there are three distinct registers in the voice: the low register (the chest or thick), the medium (thin), and the small (or higher)" (p. 8). A colourful description follows regarding the use of these vocal registers in singing:

> In general, there are two kinds of children's voices, or, rather, ways of using them. First, the coarse, loud, forced, shouty, "hearty," untrained sort—"the chest voice," which is of rather low pitch, and which grows more and more strained as the pitch goes higher; second, the trained voice, which utilizes the quality of the "head voice" and blends it with the medium and lower range. In very young children, as in the kindergarten and the first elementary grade, the voice quality is often characterized by the metallic resonance something like that heard in the crying voice of infants. . . . The head register is safe, and the tones are pure, sweet and musical. The chest voice is harsh and unmusical, loud, and inexpressive of beauty. (pp. 6-11)

Mursell (1943) insists that the human voice is comprised of only one vocal register:

> What has been referred to as the "head voice" has been somewhat of a shibboleth in American music education in the immediate past. But it is at best a questionable concept. Strictly speaking there is no "head" register, or indeed any other registers of any kind. There is only the free and naturally produced voice. (p. 264)

Stofft (1979) summarizes the diverse opinions held by vocal music educators regarding the number of registers in a child's vocal range between 1885 and 1973 (See Table 1). An extension of this table to include contemporary writings would indicate a continued acceptance of two or three registers that comprise a child's vocal range (Wassum, 1979; Brown, 1988; Wurgler, 1990; Phillips, 1992; McGraw, 1996).

Because the vocal folds of both boys and girls stay at a constant size between the ages of six and twelve (Stofft, 1979), it is generally accepted that both boys and girls will

experience the same vocal registration sensations until they reach adolescence (Phillips, 1992).

The three register approach divides the child vocal range accordingly:

1. Pitches that generally comprise the lower register are between c1 and below.
2. The middle register (a register which can be accessed by either head voice or chest voice vocal production) ranges between c1 and c2.
3. The upper register begins from c2 to g2 and beyond.

Throughout history, the three vocal registers have been given a wide assortment of names. Pre-scientific terms describe the particular sensations each register elicits. For example, the uppermost segment of the vocal range has been labeled "head voice," "the singing voice," "upper adjustment," "high," "light," "thin," or "loft" register, "voce di testa," "voix de fausset," "voix blanchée," or "vox captis." Scientific phrases applied to the upper register are cricothyroid (CT) vocal fold activity. The middle segment of the voice has been labeled "middle adjustment," "middle" or "mixed register," "throat voice," "mid-range," "voix mixte," or "vox gutteris." It is the middle segment of the vocal range which can be accessed by either cricothyroid or thyroarytenoid function (Phillips, 1992). The lower segment of the vocal range has been labeled in pre-scientific terms: "chest voice," "lower adjustment," "coarse," "low," "heavy," "thick" or the "modal" register, "voce di petta," "voix de poitrine," or "vox pectoris." Scientific phrases for the lower register are thyroarytenoid (TA) vocal fold activity. For the purposes of this paper, many of these terms will be utilized. Of particular interest to Chapter Three are the semantics of pre-scientific terms.

TABLE 1: Vocal Register Review

Date	Author	# of Registers	Names of Registers			
			1	2	3	
1885	Behnke and Brown	(2)	thick-chest		thin	
1888	Stubbs		thick		thin	
1898	Howard	2	thick-chest		thin-head	
1906	Johnson	3 (5)	thick	thin	small	
1907	Bates	2	chest		head-placed	
1932	Coleman	(2)				
1934	Jersild and Bienstock	2	thick-chest		thin-head	
1934	Jacques	3	chest	medium	head	
1938	Gehrkins		chest-thicker		head	
1942	Wilcox	2	full bodied		typical treble	
1943	Mursell	1				
1951	Grant	2	chest quality		head quality	
1953	Mackworth-Young	chest		medium (falsetto)	head	
1956	Kortkamp	?2 (4)	low gear	second	high	overdrive
1959	McMillen	2	heavier quality		head quality	
1959	Luchsinger	3 (4)	chest	middle	head flageolet	
1961	Sedlácková	3	chest-low	middle	head-high	
1962	Ingram and Rice	2	chest		head	
1962	Van Den Berg	3 (2)	chest	mid-voice	falsetto	
1967	Wiseman	2	chest		head	
1971	Wilson	2	chest		head-high	
1972	Gould and Savage	2	low		high	
1973	F. Swanson	2	chest tone		head tone falsetto	

Note. Adapted from "The range and registers of the pre-adolescent singing voice: A review of writings with conclusions applicable in teaching children to sing", by J. Stofft, 1979, Master's thesis, University of Southern California at Lost Angeles.

Vocal Range: Definitions

Vocal range is closely connected to vocal register, as the vocal range is affected by the coordination of muscular events that occur within each vocal register. Wilson (1970) defines vocal range according to separate *physiological* and *musical* categories:

> The *physiological* [italics added] frequency range of children's voices changes during vocal maturation. The physiological frequency range is the range from the very highest frequency the child can reach, even though it may be quite unmusical, down to the lowest physiological frequency that can be analyzed, again most unmusical. The majority of children below the age of six have a physiological range of about two and a half to three octaves. Almost a fourth of the children six to sixteen years of age have a physiological frequency range wider than three octaves. The *musical* [italics added] frequency range is the range from the highest musical tone a child can match down to the lowest musical tone he can match accurately. The musical frequency range of children's voices when they are about eight years of age is about an octave, but the range rapidly expands to two octaves in the next few years. (pp. 9-10)

Stofft (1979) considers vocal range from several perspectives: *physiological, speaking, musical,* and *potential with training.*

> The *physiological range* [italics added] of the pre-adolescent child is extensive. As with any other musical instrument, size and proportions are factors which help to determine the possible pitch range. The larynx of the child of the elementary school age is very small; consequently, the tones which it can produce are high in pitch. Because of the size of the instrument and the pitches it can produce, the child voice is properly labeled soprano . . . physiological range is a constant and, therefore, is not effected by exercise of training. It represents the physical possibilities of the child's larynx. (pp. 233-234)

The *speaking range* consists of the pitches that a child uses in normal conversation. According to Stofft, the speaking range is located at the bottom of the physiological range, somewhere between *a* and *c#*. The *musical range* is considered to be a "comfortable" or "practical" range for singing (p. 75). The *potential range* "is the practical extent of pitches which a child at a given age can reasonably be expected to be able to sing" (p. 236).

An analysis of Stofft's categories reveals that the *musical* and *potential range* are interdependent; the "comfortable" or "practical" range is based on highly subjective, "reasonable" expectations. As shall be seen in Chapter Two, the possibility for open interpretation of these terms is pedagogically problematic.

Vocal Range: Literature Review

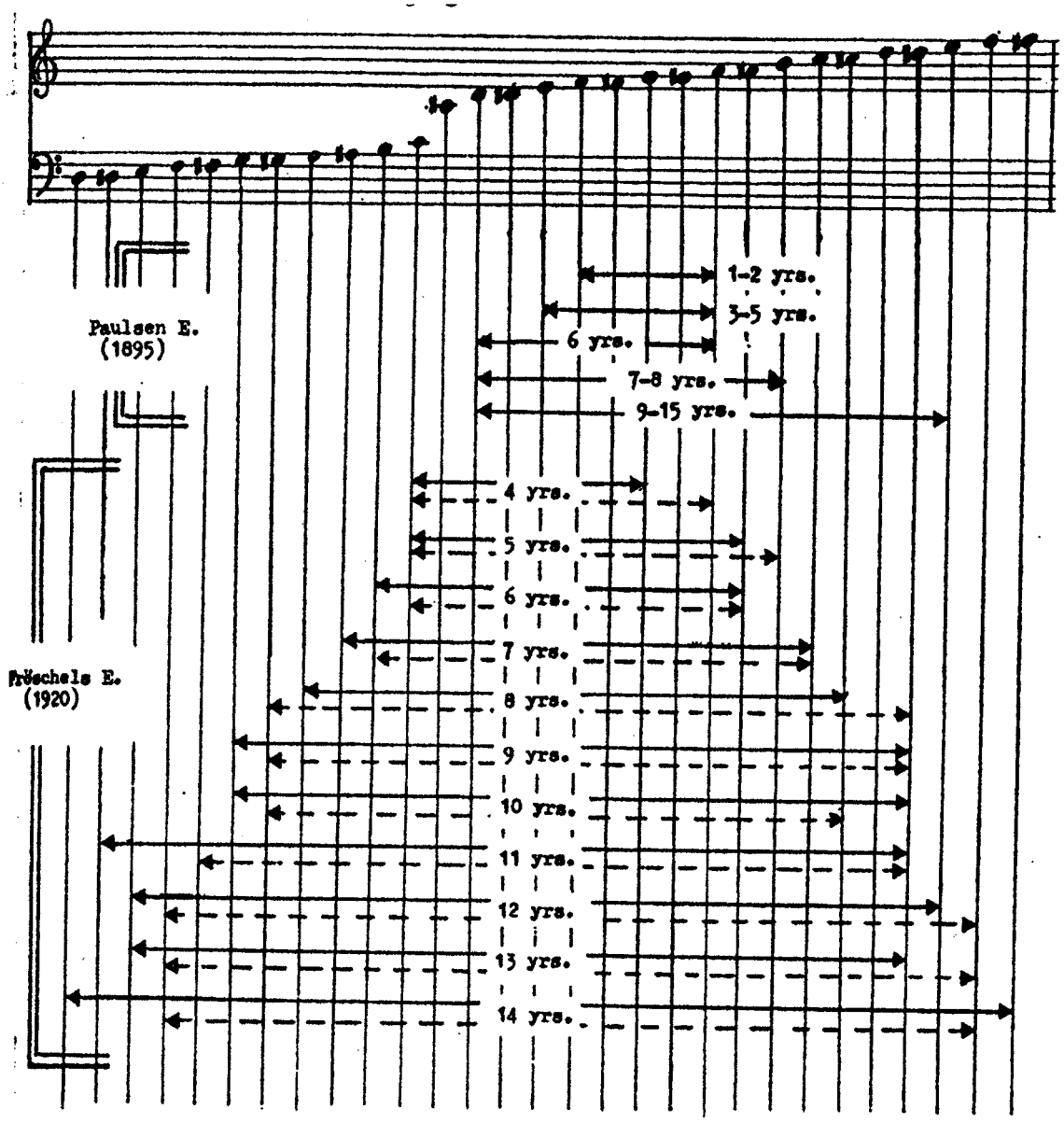
The number of studies concerning child vocal pedagogy from the late nineteenth century to the twenty-first indicate a steadily increasing concern and interest in the child voice, specifically in regard to vocal range. The studies concerning vocal range either *directly* or *indirectly* reveal both opinion and scientific research conducted by a diverse group of researchers, including music educators, vocal pedagogues, choral directors, public and private school music teachers, professionals in medicine, speech and psychology.

Vocal range is approached *directly* when the primary purpose of the research concerns vocal range measurement or the study of specific approaches to expand or enhance vocal range. Vocal range is studied *indirectly* when it is discussed as a secondary issue affecting intonation, pitch-matching or pitch accuracy.

Welch (1979) conducted a comprehensive historical review of perspectives held by vocal pedagogues concerning the vocal range of children from the late nineteenth century until the mid-twentieth century (See Figures 4a-4e). He concluded that:

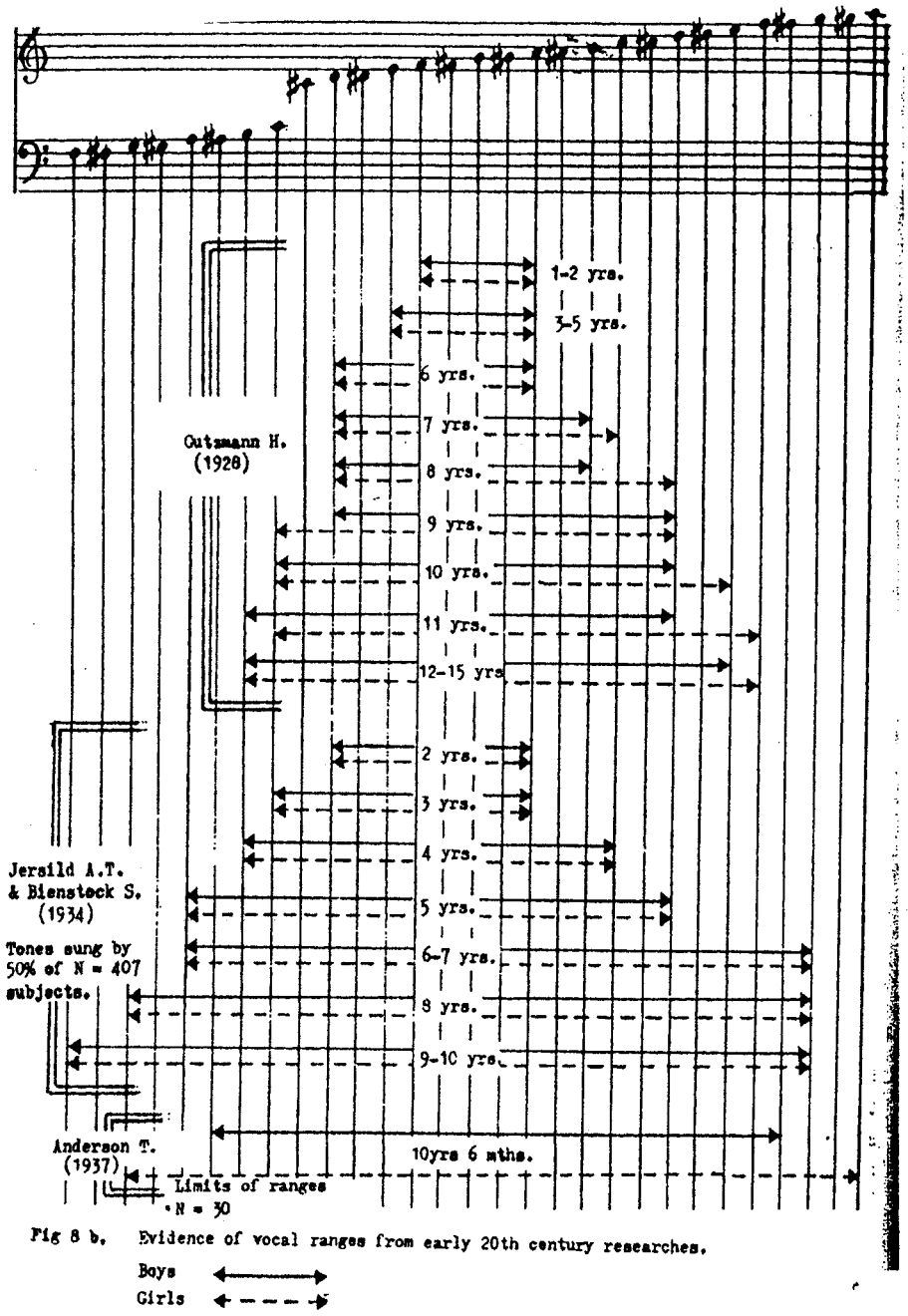
> child vocal range increases with age; there are slight sex differences with girls attaining a wider range earlier than boys; there is some evidence that social class factors are operating, poorer homes produce fewer singers; the child's comfortable vocal range is lower than the published music range. (p. 26)

Figure 4a. Evidence of vocal ranges from early researches



Note. From "Vocal range and poor pitch singing," by G. Welch, 1979, Psychology of Music, 7(1), pp. 25-29. Copyright 1979 by G. Welch. Reprinted with permission.

Figure 4b. Evidence of vocal ranges from early 20th century researches



Note. From "Vocal range and poor pitch singing," by G. Welch, 1979, Psychology of Music, 7(1), pp. 25-29. Copyright 1979 by G. Welch. Reprinted with permission.

Figure 4c. Evidence of vocal range from recent researches

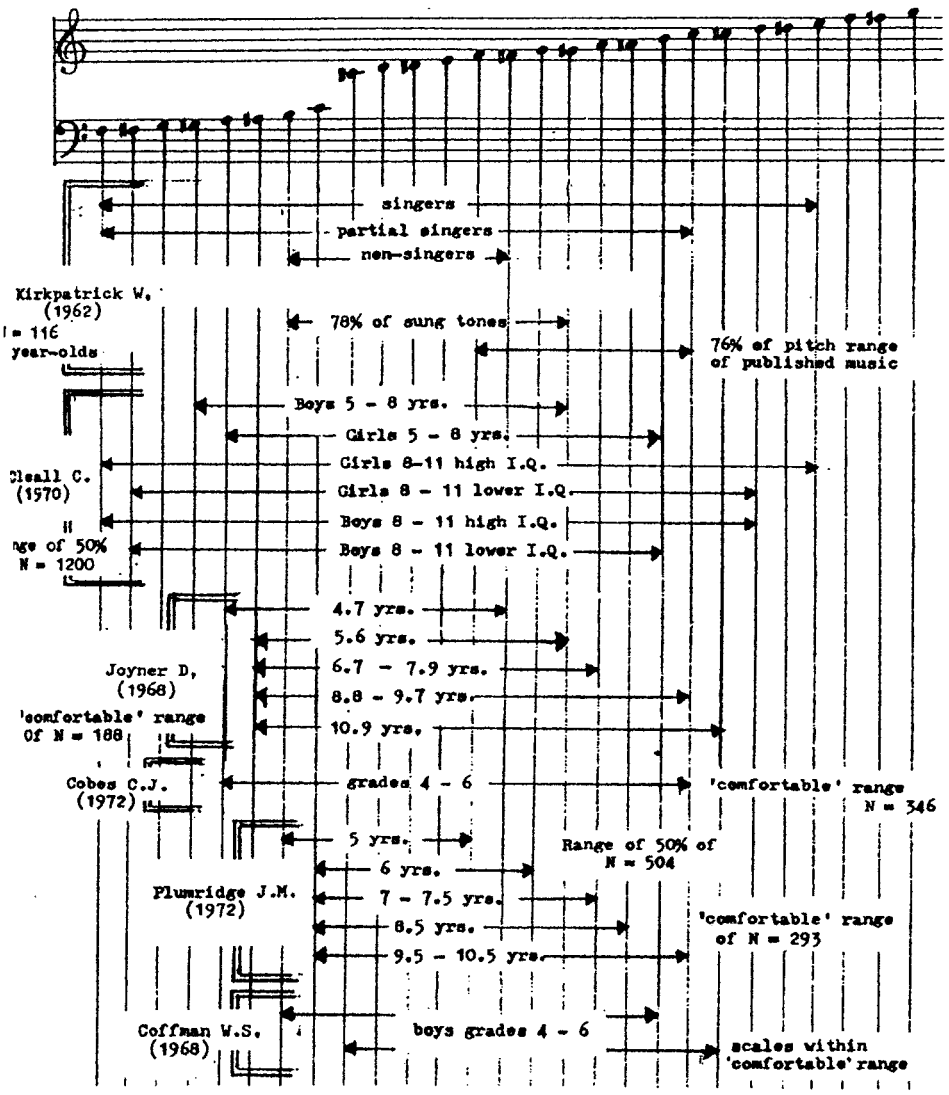


Fig. 9 a. Evidence of vocal ranges from recent researches.

Note. From "Vocal range and poor pitch singing," by G. Welch, 1979, Psychology of Music, 7(1), pp. 25-29. Copyright 1979 by G. Welch. Reprinted with permission.

Figure 4d. Evidence of vocal ranges from recent researches

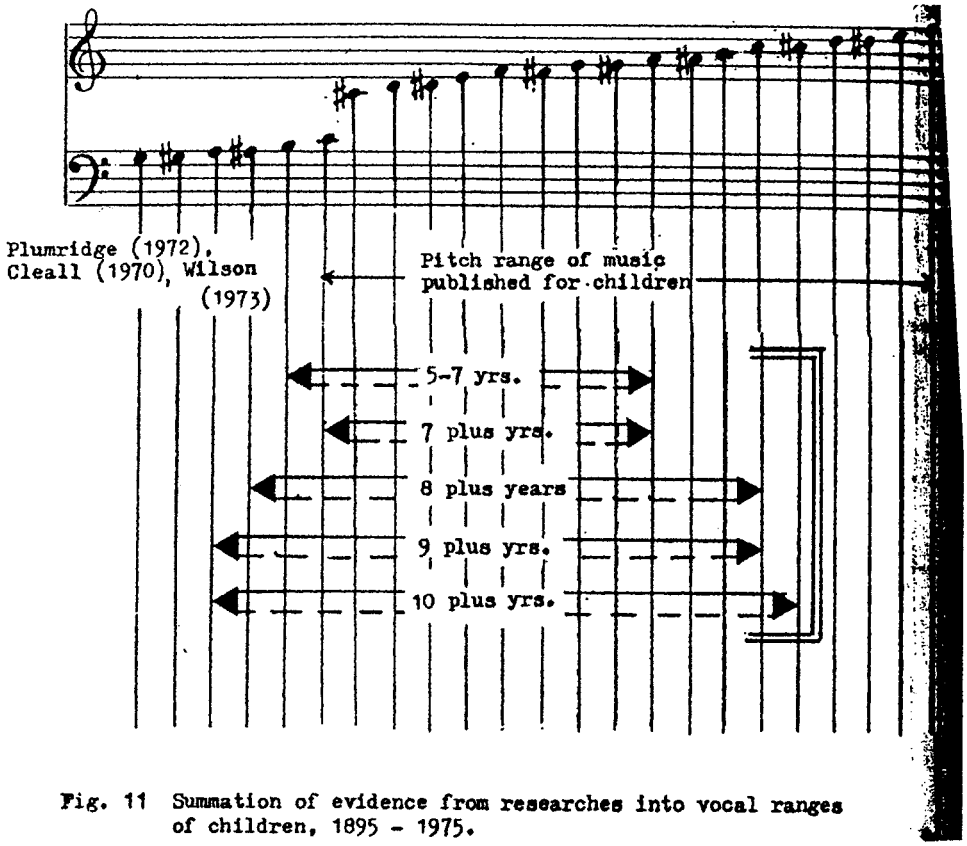
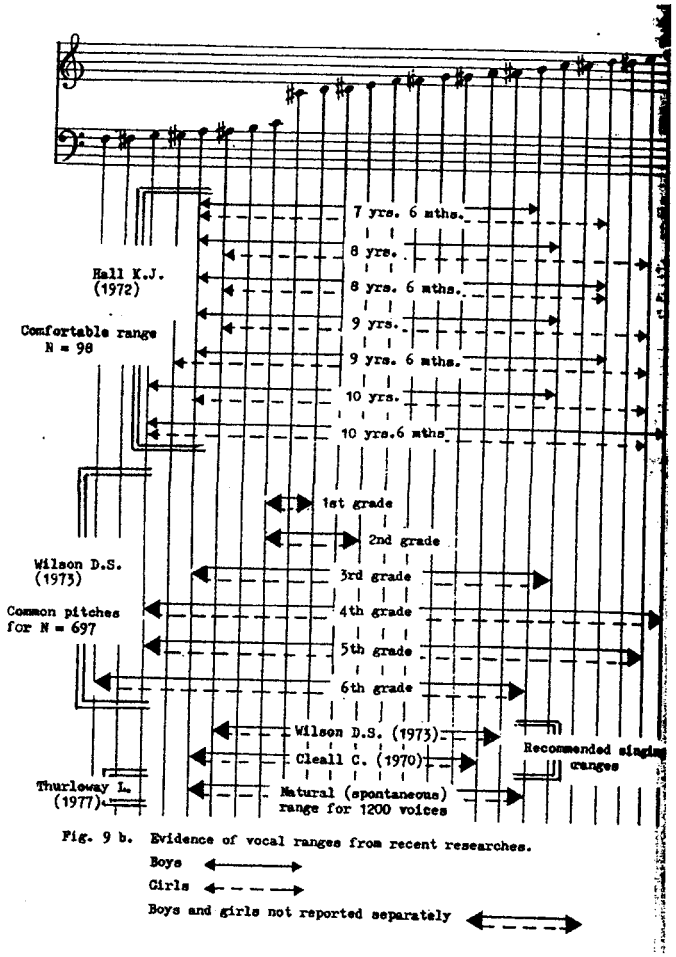


Fig. 11 Summation of evidence from researches into vocal ranges of children, 1895 - 1975.

Note. From "Vocal range and poor pitch singing," by G. Welch, 1979, Psychology of Music, 7(1), pp. 25-29. Copyright 1979 by G. Welch. Reprinted with permission.

Figure 4e.
Summation of evidence from researches into vocal range of children, 1895-1975



Note. From "Vocal range and poor pitch singing," by G. Welch, 1979, Psychology of Music, 7(1), pp. 25-29. Copyright 1979 by G. Welch. Reprinted with permission.

In the nineteenth and early twentieth century, Howard (1898) and Rix (1910) recommended that limits be placed on the vocal range of young singers. These pioneers in child vocal pedagogy prescribed ranges considered to be appropriate for children. They strongly encouraged children to sing within the range of e1-e2 or f1-f2 with the use of soft, light, head voice production and to avoid use of the chest voice.

As seen by the Welch's summary and conclusion above, during the twentieth century a number of studies revealed an interest in the "natural," "comfortable" range of the child voice. In one of the first experiments concerning child vocal range, Jersild and Bienstock (1934) concluded that most children naturally sang lower than what had been previously recommended by school music texts. In addition, they discovered that vocal range expanded throughout the developmental process.

In mid- twentieth century, Cary (1949) recommended that vocal range deficiency could be improved with guidance involving both physical body coordination and vocal coordination.

Lobbato (1960) concluded that "the voice ranges of most first grade children are significantly lower than the commonly recommended range of e1 to e2" and that pitch levels of songs be adapted to recognize individual differences within a group of children (pp. 86-87). Smith (1961) found that vocal training was necessary for children to discover how to shift from one vocal register to another. He discovered a marked discrepancy between the high tessitura of music published for nursery school children and the "comfortable" singing range of a young child. Kirkpatrick (1962) and Gould (1968) also recommended that children's songs be set in a "comfortable" vocal range at the beginning of their vocal training.

Van Oordt and Drost (1963) noted that the frequency of the speaking voice of young children was significantly lower than the frequencies of their lowest musical tones. They also found that "in very young children the physiological frequency range of the voice has a broad, almost 'adult' range; the musical frequency range of the voice develops within the limits of the physiological range and increases appreciably with age"

(p. 297). Boardman (1964) concluded that children could be trained to sing over a wide range at an early age.

Wilson (1970) conducted a significant study that drew several important conclusions concurring with earlier research. Wilson recommended that singing in a lower tessitura than what had previously been advocated (i.e. a vocal range of e1-e2) does not harm the child voice; songs should be adjusted to fit the child's lower, "comfortable" vocal range.

According to research conducted by Young (1976), children would often echo short melodies with correct intervals but spontaneously transpose the melody to a lower key. Young made interesting correlations concerning race, noting that singing in lower keys was "a very common occurrence with black kindergarten and first grade children since most black children have a lower natural voice pitch than white or American Indian children. Remedial echo singing, hand signs and two-hand singing for increased voice development" were suggested to assist these children (p. 9).

Writers in the last decades of the twentieth century questioned earlier research. Stofft (1979) strongly disagrees with the work of Kirkpatrick, Gould, and Wilson:

> Those who professed that healthy children's voices are alto or low, and who advocated singing in a low range have disregarded the nature and potential of the child voice, and have neglected the responsibility of guiding the training of these voices. Allowing or encouraging children to sing exclusively or continually in a low range (chest voice) is inadvisable: it limits the development of vocal skills and, if continued over a long period of time, can be harmful to young larynges . . . The development of the child's potential singing range coincides with the development of his ability to use the upper registers properly. As suggested by many reputable child-voice experts, training must begin with "finding" the head voice, then proceed to extending that quality downward to blend (equalize) the registers. (pp. 359-360)

Wassum (1979) conducted a longitudinal study examining the vocal range of the elementary school child. Her findings indicated that development and expansion of range

was strongly connected to maturation. In contrast with previous research of the time, she concluded that children's voices "are both *higher and greater in span* [italics added] than has been previously reported" (p. 214). Wassum also recommended that "the existence of distinct vocal registers in the child voice merits further systematic investigation" (p. 225). Later analysis of her research explained her surprising findings: because Wassum actually *prescribed* pitches for children to sing rather than *allowing the children to choose a spontaneous pitch of their own*, Wassum may "have evoked singing responses in the higher 'head' register" (Goetze, Cooper & Brown, 1990). Wassum played an essential role in controlling the vocal range of the child. The issue of control is important for later discussion in Chapter Three.

Diaz (1980) and Kavanaugh (1982) studied vocal range indirectly by an analysis of recommended published music series, finding a gradual lowering of tessitura of music published throughout the period studied. These findings will be discussed further in Chapter Two. Collins (1981) made connections with the vocal range of children and their geographical disposition within the United States of America. Apfelstadt (1982) cautioned against the use of extreme tessituras, but acknowledged that the potential range of children is fairly wide. Apfelstadt also encouraged more research concerning the influence of vocal models:

> The effects of voice production and models on children's singing ranges have not been established through research, but there is speculation that a relationship exists among poor production, poor models, and limited range. Research is needed to determine possible effects of pop singers as role models for voice production. If children's ranges have dropped, as some research suggests, they have they done so because children are imitating models they hear on television, radio, and recordings? It would be instructive to compare two groups of students, each having different models of voice production to see what, if any, effects there might be on vocal range. (p. 7)

Vocal range research for children during the past twenty years has made important connections between vocal coordination, vocal registers and vocal range. Brown (1988) makes a positive correlation between vocal training and expansion of the singing range. Goetze, Cooper & Brown (1990) suggested that previous studies regarding vocal range should be

> reconsidered in view of vocal registration. In addition to information about vocal registration, teachers need techniques for assisting children in finding and using the head voice. Attention to registration, which may result in extending the children's vocal range, may allow teachers to use song material with wider and higher vocal ranges. (pp. 30-31)

Wurgler (1990) advocated the training of the child voice in a systematic way, using perceptual events in each register as a monitor for vocal development.

> Registers, as the acoustic representatives of certain vocal productions in given pitch ranges, are the main perceptual clues a teacher has to monitor vocal progress in beginners. Teachers who want to develop vocal ranges and pitch accuracy throughout the ranges of their students must commit to designing and implementing vocal production goals. They must do more than sing; they must teach singing. (p. 144)

Rutkowski (1990) identified five stages in vocal development for children that showed an increase in vocal range with each developmental stage.

Rupp (1992) concluded that children considered to be nonsingers (i.e. those who can sustain tones but remain within the speaking voice range) were able to develop the ability to sing in the upper adjustment when learning from a teacher that was able to produce head tone quality. She also made another important conclusion for discussion in Chapter Three, "that teachers can develop almost any vocal quality they strive for in children because the human voice has 'an inherent flexibility' which enables it to 'imitate' a variety of sounds" (p. 100).

Welch (1986a) established a developmental continuum model of childhood singing that initially identified five stages in a child's singing ability. Later revised to four stages, the continuum showed that as singers move from one stage to another, both the high and lower ends of the range are expanded (Thurman & Welch, 2000).

Moore (1991) and Killian (1993) suggest that both children and adults tend naturally and spontaneously to sing familiar songs in the bottom part of their potential singing range and recommended that teachers remain cognizant of this and exercise the upper ranges of children's voices.

McGraw (1996) strongly promoted the use of vocalises with children to expand vocal range. She concludes "that children's singing ranges are developed by training children to use head voice, and that range extension hinges upon the use of top-down vocalises which begin in upper range (d2 and higher) for beginning singers" (p. 202). McGraw strongly disagreed with earlier research indicating that "pitch accuracy in the lower range is NOT a prerequisite for learning to sing using head voice" (p. 207).

A summary of this literature review reveals the following considerations regarding vocal range for children:

1. There is a diversity of opinion concerning the "natural" or "comfortable" vocal range for children. This concept is inherently subjective, based entirely on opinion. As shall be discussed in Chapters Two and Three, "natural" and "comfortable" can be closely connected to a lack of training or effort.
2. Music educators in the late nineteenth and early twentieth century advocated that children sing exclusively in head voice with complete avoidance of the lower register. Children were prescribed specific vocal ranges and registers

considered good for them. Later research studies challenged these notions supported by evidence that a gap existed between music literature published for children and the "natural/comfortable" vocal range of children.

3. Research during the last decades of the twentieth century identifies an important correlation between vocal coordination and the ability to sing in the upper register. According to this research, the child voice must be trained to discover this register.

Phonation: Upper Adjustment

The above literature review surveyed studies that embrace singing techniques for children primarily related to the Western classical musical tradition. In recent years, academic study of other musics and singing styles are given important consideration within the world of formal vocal pedagogy (Goetze, 1998; Thurman & Welch, 2000).

The vocal technique used within the Western classical music tradition is based primarily on the philosophy of Italian *bel canto* singing masters. Their vocal pedagogy rests on a low positioning of the laryngeal mechanism, maximum use of the vocal tract resonators and seamless register transitions. In regard to training children's voices, the primary pedagogical goal in the Western classical music tradition is to help children access the upper register. The use and exploration of chest voice singing is done with extreme caution as it is thought that use of the voice in this region will negatively impact and permanently affect vocal production in the upper register. Exploration of the lower register is done sparingly. If the lower register is approached at all, it is exclusively accessed via the same manner of soft, light sound production used in the upper register. In the nineteenth century singing schools in Britain and the United States, loud singing

and singing in the lower register was considered to be coarse and harmful. Howard (1898) wrote:

> Children up to the age of puberty, at least in class or chorus singing, should use the thin or head-register only. 1st—It is from a physiological standpoint entirely safe. The use of this register will not strain or overwork the delicate vocal organs of childhood. 2nd—Its tones are musical, pure and sweet, and their use promotes the growth of musical sensibility and an appreciation of beauty of tone. 3rd—The use of the thick or chest-voice in class-singing is dangerous. (p. 28)

The nineteenth century notion that encourages the exclusive training of the upper adjustment is a philosophy that is prevalent to the present day. While leading experts in the field of child vocal pedagogy suggest an exploration of all vocal registers, many pedagogues such as McGraw (1996) are "convinced that many children will not learn to sing unless training in head voice production is provided prior to an emphasis on chest voice" (p. 213).

Phonation: Lower Adjustment

A review of pedagogical literature reveals that there are very few scholarly or scientific writings encouraging systematic development of the lower register in children's singing. The scholarly writings that do exist are studies that pertain to adults (Bevan, 1989; Bounous, 1997; Estill, 1980; Lebon, 1986; LeBorgne, 2001; Mann, 1995). Non-academic writings appear in the form of brief articles which express personal opinions and beliefs concerning the lower adjustment in children's voices (Edwards, 2002; Edwin, 1995, 1998, 2004; Lyons & Stevenson, 1990).

Popular music is undeniably one of the strongest influences for children's singing today. One of the most commonly used types of phonation in Broadway, rock, country, swing and jazz is that which is commonly referred to as "belt voice." Other terms to describe this manner of phonation are "belt technique" or "belting." "Although

controversial among voice teachers, this kind of vocal production is the most prevalent singing approach today" (Edwards, 2002, p. 34).

Lyons and Stevenson (1990) provides a simplified definition of belting in connection to rock music singing: "It remains a fact that rock singing sometimes demands a belted sound in which both sexes push the chest voice up as high as it will go" (pp. 22-23). Edwin (1998) indicates that belting is

> a twangy, often loud bright sound that is the result of the coordinated activity of thyroarytenoid ("chest") and cricothyroid ("head") vocal fold muscles, that, although it is thyroarytenoid [chest voice] dominant, it includes cricothyroid [head voice] activity which increases as the voice ascends in pitch. (p.61)

Bevan (1989) concludes that belting and chest voice production are perceptually different. For example, the belt voice is produced by the dominant use of thyroarytenoid vocal fold activity and a high laryngeal position; chest voice singing requires a lower position of the larynx. Edwin (1998) identifies other differences between perceived belt technique and chest voice singing which include "the 'twang' versus the 'pear-shaped tone'; the higher larynx versus the lower larynx; the narrow pharyngeal space versus the wider throat; and increased tension in body and throat versus freer body and vocal posture" (pp. 54-55). Denizot (2003) states that the soft palate is lower and the vocal folds are closed for a longer duration using belt technique.

Both belting and singing in a forced chest register are still considered by some to be harmful not only to children's voices, but adults as well. Many renowned vocal pedagogues such as Miller (1986), steeped in the classical tradition tend to ignore or disregard "popular vocal idioms that purposely violate registers" (p. 133). Miller (1997) states:

> It is true that there are female singers of good vocal repute who carry chest up a note or two higher in their particular category than is generally thought desirable, in response to the demands of specific operatic roles. When this practice becomes habitual, so as to produce sound startling in quality or impressive in size, the voice inevitably begins to sound as though it hangs in segments. When the chest voice becomes standard practice beyond its normal range limitations, the middle voice will no longer respond well, because the heavier mechanism of the vocalis muscles (internal thyroarytenoids) has won a permanent victory over the lighter mechanism (the predominantly cricothyroidal action). . . . Carrying female chest well up into middle voice is a pernicious technique sometimes used by entertainers, singers of musical comedy, rock, soul or belting (technique similar to out-moded torch). Such singers often lose the facility to pass into head voice and must rely in time entirely on the heavier mechanism. This practice is totally removed from the kind of register consideration found among students of traditional serious music in Western culture. Even though tastes regarding the uses of chest vary nationally to some extent, all of the schools are aware of the danger of making use of the chest mechanism outside of the low range of the voice. . . . As part of the current drift of popular culture, open yelling of emotional texts is prevalent. Its frequent use precludes any unification of the registers of the voice, producing muscular and even cordal imbalance, vocal nodules, and irreparable damage to the speaking as well as the singing voice. (pp. 131-132)

Other traditionalists such as Arnold (1973) actually warn young singers of terminal health problems in relationship to singing using forced lower adjustment:

> The currently widespread and great abuse of young voices through the crude styles of so-called pop singing is another reason why the knowledge of vocal physiology should be propagated to wider circles. Otherwise, the early ruin of promising voices with the inherent danger to laryngeal health, including the precipitation of cancer, will continue to increase. Last but not least, we should preserve and promote the cultural heritage of artistic singing in the great traditions of the past. (p. 150)

Bevan (1989) recommends that further research is needed to determine inherent risks and dangers in chest voice singing as well as in belt technique. Estill (1980) maintains that "contrary to popular belief, this quality [belting] does not always result in damage to the voice" (p. 82). Mann (1995) concludes that classical vocal techniques can be used to enhance training in singing popular musics.

Phillips (1992) comments on the use of chest voice phonation in relation to children's voices:

> It is commonly known that children lacking vocal instruction mostly gravitate to the chest voice for singing. This is the speaking-voice register, with which they are most comfortable, and many children, never having experienced anything else, will sing exclusively in the chest voice. Because this lower register in the child's voice is quite elastic, it can be used to sing far above middle C, resulting in a harsh sound and strained technique, which is potentially damaging to the vocal folds. It can be compared to driving a car at sixty miles an hour in low gear: the transmission is not built to withstand such abuse, and neither are the vocal folds. The loud, boisterous singing of children, so commonly heard in many schools, is singing in one gear—low. Such singing, if sustained over a long period of time, can lead to permanent vocal damage. The vocal folds make far greater physical contact when singing in the lower adjustment, but such contact at high levels of tension often results in physical problems. (p. 44)

Despite the paucity of legitimate scientific research on the physical demands imposed by the use of forced chest voice or belt technique with children, many respected vocal educators advocate more inclusive approaches to children's singing. They encourage an exploration of a variety of singing and speaking techniques that embrace a wide spectrum of sounds, styles and traditions (Goetze, 1998; Thurman, 1999). Thurman and Welch (2000) admit that:

> Voice scientists have not discovered all of the details about the vocal coordinations that produce belting voice quality and its acoustic characteristics. Enough information has been discovered, however, to permit very informed descriptions and the initiation of voice education methods. . . . Preventing belted singing by children and adolescents will happen on the day playground yelling is prevented. Both are forms of strong, cathartic self-expression. . . . Our firm conviction is, however, that all human beings who have normal anatomy and physiology for voicing are capable of a very wide variety of voice coordinations that can produce a very wide array of voice qualities, volumes, pitches, and timings with vocal safety. And that includes belted singing, operatic singing, twang singing, the singing of Middle Eastern music, Tibetan monk chanting—you name it. (p. 785)

Summary

Chapter One establishes several diametrically opposed physiological perceptions of the child singing voice relevant for further discussion in Chapters Two and Three:

1. The fragile or resilient physiological nature of the child voice
2. The "natural" or "comfortable" vocal range
3. Avoidance or exploration of the full vocal range and registers, including thyroarytenoid phonation using belt voice

Vocal pedagogy is naturally based on thorough knowledge of basic physiology, anatomy and function of the vocal mechanism and its limitations and capabilities, especially concerning vocal range and registers. As can be seen by the material presented in this chapter, the diversity of opinion concerning the healthy, proper and safe use of vocal registers, specifically the lower register will result in diverse pedagogical approaches; subsequently, repertoire is strongly affected—especially those materials composed which serve primarily didactic purposes—reflecting research results.

Beginning in the early twentieth century, vocal range studies revealed that children's voices were naturally lower than once thought, although the prepubescent voice would gather strength and wider range through time. Studies from the middle part of the twentieth century found that there was a marked discrepancy between a child's natural vocal range and the high tessitura of music found in series published for children. They concluded that children singing in lower, more comfortable, natural ranges demonstrated a greater ability to sing accurately, match pitches and sing in tune.

From a physiological perspective, many esteemed music educators happily embrace the prospect of lower register exploration or teaching belt voice technique.

Others strongly discourage these explorations or techniques, adhering to nineteenth century physiological perspectives that the child voice is a fragile, tender and delicate instrument in need of protection.

CHAPTER TWO

Perspectives of Pedagogy and Repertoire

The training of children's singing voices has been a topic of research, debate and discussion for approximately two centuries. Some pedagogues encourage postponement of formal training for children until puberty while others advocate early training (Edwin, 1993; Sataloff & Spiegel, 1989). Ashmore (1995) traces the development of, and interest in, child vocal pedagogy throughout the twentieth century. She notes three significant phenomena:

1. an increase in the number of literary contributions pertaining to the training of the child voice,
2. the establishment of the contemporary children's choir movement, and
3. an increase in research pertaining to the child voice.

A fourth indication of increased interest in child vocal pedagogy is the gesture by national organizations of singing teachers to officially adopt the child voice and child voice education as an area of legitimate study, exploration and professional endeavour. The American Academy of Teachers of Singing waited until 2002 to publish an official document entitled "Teaching Children to Sing." They state in the *Journal of Singing* (2003):

> The American Academy of Teachers of Singing supports and encourages the teaching of children to sing. As in other activities in which youngsters are involved, singing can be accomplished on many levels from recreational to professional. At all levels, however, there should be qualified instructors willing and able to help young singers on their musical journeys. (p. 378)

Historically, the training of children's voices has been approached in a group vocal setting through children's choirs or school music settings. It was considered dangerous for the fragile voice of the child to be trained in a private setting prior to the onset of puberty. In the late twentieth and twenty-first century, however, it has become

widely acceptable for children to seek private vocal tuition. In support of this movement, Edwin (1995) states:

> I teach children and adolescents how to sing. I have found no medical or pedagogical evidence to suggest that I am doing the wrong thing. I have found no evidence to suggest that waiting until children are fourteen or sixteen years old before they begin private study is a good idea. We don't lock children in a room and refuse them other physical and creative activities. Why then deny them this one? As long as we remember that they are children with immature minds and bodies and not adults, we are on sound pedagogical ground developing good vocal and performing technique. (p. 54)

Chapter Two traces the development of pedagogical philosophies and methodologies for training the child voice from the mid- nineteenth century to the present day. Particular consideration will be given to differing opinions concerning the nature of the child voice, appropriate vocal range and vocal registers. Current literary contributions concerning child voice education will be reviewed.

Chapter Two will also discuss vocal range and vocal registers in relation to printed music and audio-visual repertoire available to children. Music literature specifically written for children's voices has a relatively short history of approximately one hundred and fifty years. During this time, the amount of repertoire developed for children and available in print and audio-visual sources is staggering; therefore, a comprehensive study tracing the influence of children's solo and choral music, music that children listen to through radio, CD, music video or other electronic means on the vocal production of children is not feasible within the scope of this study. For the purposes of this paper discussion will be limited to vocal range and registers in relation to repertoire for the music classroom in the form of graded music series, selected repertoire for children's choirs, and selected music available for children through audio- visual sources.

Approaches to Child Vocal Pedagogy

For adults, vocal pedagogy through the centuries has embraced a wide variety of approaches that have been labeled mechanistic, poetic, demonstrative, phonetic, progressive and inspirational (Gregg, 1995). For children, two basic approaches have been developed—the "formal" approach and the "song" approach.

The Formal Approach

The formal approach, as defined by Ashmore (1995),

> places emphasis on developing the child voice through technical vocal skills. It takes into account the physical requirements of expressive singing by using specified drills and/or vocal exercises which are designed to develop particular aspects of the student's voice in a systematic manner. (p. 10)

The formal approach addresses techniques that are based on technical exercise, posture, breathing and tone production. In teaching singing by the formal approach, it is suggested that the teacher must bear hold a specific conception of ideal tone quality or ideal vocal tone. On the basis of the teachings of Helen Kemp, Ashmore describes essential elements of ideal tone quality and vocal tone:

1. Tones are clear and free, without harsh nasality or muffled throatiness.
2. Head tones are well developed but not forced.
3. Pitch is secure.
4. Full and free upper tones pass into the lower pitch range with brightness and lightness, and voices do not change abruptly or push out on lower tones with an obvious break.
5. Voices have carrying power (projection) because vowels are pure and well-focused (centered).
6. Voices keep both "ring" and "roundness" in the singing volume spectrum from *p* to *f.* (p. 73)

The use of "head" tone is central to the sound ideal for children embodied in the music of the Western classical canon. Stemming from trebles singing medieval and renaissance polyphonic choral in European monasteries and cathedrals, the use of the

upper register was and still is synonymous with cultivation, education and training. North American music educators throughout the nineteenth and twentieth centuries adopted this particular sound ideal. It is often strongly associated with the English choir school. In describing the national English school of singing, Miller (1997) states that there is a part of the English school

> which is devoted to the cathedral tone in boys and in adults, whether male or female. A straight, vibrato-less quality is much admired by the English in some of the solo song literature, in church music, and in early music. The absence of vibrato is thought to produce a tonal purity and bears a resemblance, to a certain extent, to the *Kopfstimme* of the German School. (p. 77)

The formal approach to the training of the singing voice is based on nineteenth century Pestalozzian educational ideals. Early pedagogical manuals devoted to singing were highly structured and sequential in nature, comprised of rigidly prescribed vocal exercises, drills and didactic songs. The primary objective of these manuals was to secure a strong technical foundation, establish music literacy and cultivate vocal tone. These mid- nineteenth century tutors advocated exclusive development of the upper register. Tone produced in the lower register was considered to be harsh, unmusical and potentially harmful to a child's voice.

Lowell Mason's educational philosophies embraced the pedagogical ideals of Pestalozzi and created a methodology whereby children would start learning from a point that is known with subsequent steps moving toward the unknown. The method emphasized learning prescribed material in a sequence that was compatible with the growth and development of the child. For Mason, the teaching of singing was one that was inclusive, encouraging all children to sing. Music literacy was a goal, but Mason recognized the need to establish certain skills, concepts and attitudes before this could be

accomplished. The development of the musical ear before the musical symbol lent itself to the slogan "rote before note." Mason believed that it was a child's innate ability to sing, and that singing was a natural means of self-expression.

When applying Pestalozzian educational philosophies to the singing voice, Mason believed that the teaching of singing should begin close to the range of a child's speaking voice. At the beginning stages, literature sung by the children should therefore be placed in lower, comfortable ranges with a tessitura resting between c1 and g1 (Kavanaugh, 1982; Wilson, 1970). Through exercises and drills, children would later be guided to expand their vocal range.

Mason's approach thus established the formal approach to singing education via well-defined scope and sequence. Elements of the formal approach survived well into the twentieth century and to the present day. Criticisms of the formal approach are:

1. training techniques are dull and too strenuous for the child voice,
2. children can be systematically exposed to incorrect singing technique,
3. children will sing mechanically,
4. children are asked to conform to a preconceived sound ideal.

The Song Approach

The song approach places the singing and teaching of repertoire ahead of teaching vocal techniques and exercises. Many music educators advocating this approach place great emphasis on the expressive, aesthetic and emotional realm. "The song approach tries not so much to train the child voice as it does to promote the child's enjoyment of singing and the child's involvement in singing" (Ashmore, 1995, p.13).

The history of the song approach can be traced back to Luther Whiting Mason, a student and distant relative of Lowell Mason. Luther Mason's efforts to establish sequential vocal pedagogy were tremendously successful, so much so that it influenced the public school system to add school music as a subject of serious study to the curriculum. Ashmore states:

> Luther Mason's teaching method included vocal exercises for the child voice that were intended specifically to develop the skill of song singing. Children were taught to sing ascending and descending scales both through the songs and as separate exercises. (p. 126)

According to Ashmore, Luther Mason chose scales of limited range so as to:

1. keep children from singing in their chest voices,
2. use the natural register of the voice, and
3. provide a base from which the range of the voice could be extended in either direction. (p. 127)

Luther Mason enthusiastically embraced the notion of "sound before symbol" or "rote before note" previously advocated by Lowell Mason. Ashmore notes that his intentions were seriously hindered when music teaching became the responsibility of classroom teachers.

> With the inclusion of music as a regular school subject, the responsibility of teaching music shifted from the music specialist to the grade teacher. Due to "a lack of knowledge of music on the part of many of the grade teachers," only one aspect of Luther Mason's approach, namely, the rote singing of songs, became a popular method of teaching music to children. Consequently, his original intention to teach children to read music through the enjoyable medium of song singing, was reduced to its simplest form, singing by rote, and eventually became merely a form of recreation for the children in the class. (pp. 129-130)

As a result, Luther Mason unintentionally became the "father" of the song approach, a popular alternative for music educators of the time. Ashmore states:

> The song method represented an alternative approach to the previous emphasis on formal techniques of teaching music reading and singing drills. As efforts were made on the part of educators to simplify the process of music reading, the song

> method became the teaching method of choice. Advocates of the song method believed that children would learn to read music by singing songs and, thus, they had the children sing as many songs as possible. (pp. 136-137)

Luther Mason's song approach, which emphasized the singing of rote songs before the technical aspects of music were introduced, and the formal approach of Lowell Mason, which emphasized the technical aspects of singing and note-reading before song singing was introduced, were in constant competition as preferred singing methods through much of the late nineteenth century and early twentieth century (Ashmore, p. 133). The song approach took precedence for much of the twentieth century. In 1934, Gehrkens abandoned formal exercises and vocalises in favour of the song approach. He writes that training the child voice is

> not done by means of formal exercises, but through learning to sing the regular songs well. The old idea was that we used exercises for training the voice and that after we got it trained we allowed the child who owned it to sing songs. The modern approach is to teach the child to sing beautiful songs and, as he sings, to train him to sing them as beautifully as possible. (p. 89)

Criticisms of the song approach are:

1. children are not taught how to use proper vocal coordination to master technical demands of the repertoire.
2. either demanding repertoire that would increase singing ability is not taught, or
3. incorrect vocal habits are engrained by singing demanding repertoire without the basic foundation of good technique.
4. music literacy and musicianship training are sacrificed for enjoyment and creativity. (This criticism coincided with American curricular reform in the

1950s when European methodologies such as Kodály and Orff were embraced).

The formal approach placed more prominence on vocal exercises and drills to develop technical skill, enhance vocal range and vocal register coordination. With increased popularity and general acceptance of the song approach, technical mastery was no longer the primary goal. Vocal range and register development were addressed through song repertoire.

Vocal Range and Register Development

In the late nineteenth century, criticism was directed toward those music educators who taught about music but did not address actual singing. Howard (1898) states: "All energies have so far been directed to the teaching of music reading. Tone has been neglected, forgotten, or at most its improvement has been sought spasmodically" (p. 45).

The unpleasant tone qualities Howard heard in the classrooms of the time led to the writing of his influential book, *The Child Voice in Singing* that served as a model and guide for music educators and music textbooks well into the twentieth century. Howard insisted that teachers instruct children to cultivate the upper register. He also believed that until adolescence, the voices of children possess a homogenous tone quality consisting of only two registers—the head and chest. Howard strongly encouraged complete avoidance of the chest register.

Howard writes:

> if pupils sing softly enough, and carry their tones neither too high nor too low, always taking into account the grade or average age of the class, then the voice will be used only in the thin or head-register, and the tones of the thick or chest-register will never be heard. (p. 53-54)

Howard also emphasized that children who were unable to match pitch be excluded from singing exercises. According to Howard's recommendations, children unable to match pitch in the upper register after two or three years of training should not sing but be listeners only (Wilson, 1970, p. 27).

As stated in Chapter One, scientific research pertaining to vocal range was firmly established at the beginning of the twentieth century. Research conducted by Weld (1910) provided many valuable insights concerning vocal hygiene and the child vocal mechanism. He cautioned against excess strain of the child voice by forcing the use of upper boundaries of the vocal registers.

The advent of the Progressive Education Movement during the 1930s connected the needs of children with essential, optimal environmental conditions for learning. This educational climate established a strong foundation for the creation of educational methods and curricula. It also provided a strong research basis that would influence subsequent research projects in the remaining decades of the century. Inspired by the work of John Dewey, the Progressive Education Movement embraced a child-centered pedagogical approach. Children and teachers alike were encouraged to discover individual learning styles. Education of the whole child took precedence and the appreciation of music was of greater importance than skill development (Kavanaugh, 1982).

To adhere to the principles and philosophy of the Progressive Education Movement within the realm of the music classroom, music educators were advised to first be teachers of children and not simply teachers of prescribed songs. As the Progressive Education Movement focused on how the child functions in their natural environment,

singing was taught based on subjective considerations concerning the "natural" vocal range of the child. As shall be seen throughout this paper, these recommendations encouraging the rather subjective, "natural" voice of the child will be the source of much interpretation, misunderstanding and conjecture over the entire twentieth century.

As discussed in Chapter One, the appropriate vocal range for children prescribed by Howard and Rix were later replaced by recommendations for children to sing in comfortable, natural ranges. Williams, Sievers and Hattwick (1932) and Jersild and Bienstock (1934) conducted two important studies concerning the inaccurate singing of children and vocal range. They discovered that children sang out of tune when the songs they were singing were pitched outside of their natural vocal ranges. They also found that children who had been labeled as tone-deaf or monotone singers were able to match pitches in ranges that were closer to their speaking voices. In addition, they discovered that the preferred range for children to sing spontaneously was lower than once believed. "The authors presented findings which indicated that children seemed to be able to sing tones lower in pitch than the limits that have been set forth in some manuals dealing with the music training of children" (Jersild & Bienstock, p. 491). Their research produced controversial results that challenged widely accepted notions concerning the vocal range of children. Despite evidence that children were capable of producing a wide range of tones, these studies concluded that the natural vocal range of children was found to be lower than previously believed. Jersild and Bienstock conclude:

> The claim has been made, for example, that songs of young children should include tones falling within the range from E first line to E fourth space. . . . At all ages the children were able to sing a greater number of tones *below* first line E than *above* fourth space E. (p. 491)

The studies cited above, in combination with the philosophies of the Progressive Music education movement, strongly encouraged that children begin to sing by initially exploring their lower, natural range.

Further research conducted between 1930 and 1950 supported this trend, unveiling a wide discrepancy between the vocal ranges published in song literature in music textbooks and the results of vocal range studies. Drexler (1938) and Hartzell (1949) recommended that music teachers transpose songs downward to match the comfortable vocal range for children.

In the 1940s and 1950s, following the Progressive Education Movement, Mursell advocated the development of the whole child. For Mursell, singing was a means for musical development and enjoyment rather than for a skill cultivated for its own sake. Through his work on the Silver Burdett music series used in the public schools, he challenged the formal approach to teaching children to sing. Mursell (1943), a strong advocate for the song approach, writes:

> A good vocal tone is one that expresses a clear artistic and emotional intention. The voice is, au fond, an expressive instrument and an amazingly sensitive one. The way to get it to work right is not to fiddle around with its internal mechanism, most of which is terra incognita anyway. The thing to do, by all means is to use the voice as nature intended it to be used, that is as an instrumentality for the projections of expression and feeling. Children and older singers also would do well always to center the control of the voice not in the diaphragm, not in the breathing, not in the vocal cords, not in the masque, not even in the hypoglossol muscle, but in the artistic intent. (p. 264)

Mursell (1948) continues to write about child vocal registers and child vocal pedagogy:

> I am well aware that this simple idea knocks out a tremendous deal of the hocus-pocus which infects vocal pedagogy, all the way from the kindergarten right up to some of our most respected choral organizations. Probably no field of professional endeavor outside astrology is more rife with poppycock. "Straight

> tone" singing, "vibrato-tone" singing, "chest tone" singing, and so on without end! Is it not about time to return to simple artistic verities and to remember that good vocal tone, like good tone everywhere, is tone that expressively conveys a discriminating artistic intention. (pp. 181-182)

Most research directly concerned with child vocal range was conducted in the 1960s and 1970s. As stated in Chapter One, Van Oordt and Drost (1963) studied the frequency range of children's voices, examining the physiological frequency range of the speaking voice and the musical frequency range of the singing voice. Although children may possess a rather extensive physiological frequency range, the musical frequency range of the voice is lower and narrower, especially with untrained voices. They concluded that the physiological frequency range generally remains constant, but with experience the musical frequency range will increase. They state:

> Exercise gives an increasingly large part of this range an improved tonal quality and musical capacity. Differences in the amount of exercise will result in wide differences in the development of the musical voice range in a given age group: children who are well-trained in a choir from an early age will be far advanced over children who have not had this exercise. (p. 294-295)

Van Oordt and Drost (1963) observed that desires to achieve ideal tone quality and artistic objectives often take precedence over suitable vocal range:

> A review of the research which has been done to determine the vocal range of the child suggests that interest in the child voice has been almost entirely aesthetic. This aesthetic interest derived from early church music and music of a more profane nature from many periods when such composers as Bach, Bizet and Wagner made use of children's voices, particularly boys'. This seemingly cultivated form of children's singing gradually led to a complete misconception of the characteristics and capabilities of the child voice, which was even considered to have the same range as the mature woman's voice. The higher boy's voice was supposed to correspond to the soprano . . . and the lower boy's voice was equated with the alto . . . As a result, the music sung by children made demands far beyond their natural range. The situation was even more aggravated in the schools, where the children sang three and four part songs. From the theoretical and musicological standpoints, a four-part song for children's voices is absurd, because the first voice is forced up as high as possible and the third or fourth voice set low, the pupils being forced to sing in ranges for which their voices are

> altogether unsuited. The range of the child's voice is limited and it is self-evident that such misconceptions contributed to an unwarranted forcing of the voice. (p. 289)

The situation described above by Van Oordt and Drost will be discussed later in this chapter in relation to repertoire and the late twentieth century phenomenon of the virtuoso children's choir.

Much research during the 1960s advocated a child-centred approach to vocal pedagogy whereby children would begin training by starting with the vocal range of the speaking voice. Making an extremely subjective judgment concerning the nature of the child singing voice, Gould (1968) concludes: "Once a child has learned to make accurate and consistent song responses at his normal speaking range, he is ready to find his *true* [italics added] singing voice" (p. 29).

Cleall (1955) advocated the use of a lower vocal range for children. After studying the vocal range (quality of singing excluded) over one thousand children, he recommended that published music be transposed downward to take into account the comfortable vocal range of children. In keeping with prior research, Cleall strongly recommended that voice training start within a comfortable vocal range. The range could be expanded in subsequent lessons. He hypothesized that many students were not taught how to discover their voices and often discouraged from singing. He writes: "If our standard pitch is chosen to suit a talented and highly trained minority, is it possible that what is called tone-deafness (what I have come to call tone-dumbness) is actually *caused* by us musicians?" (p. 106). Cleall also found a positive correlation between intelligence and ability to sing in the upper register. This will be discussed from a social perspective in Chapter Three.

Atterbury's (1984) summary of the research conducted during the mid- twentieth century concerning the vocal range of children strongly advocates a child-centered approach to vocal training. Once again, reference is made to a subjective comfort zone for children's singing:

> Rather than demanding that children conform to our ranges, we should adjust to theirs. This is the message of numerous texts and research studies. In order to serve the child's needs, we must first identify the scope of his/her natural range, and then use that information for our teaching. (p. 3)

Studies from this time showed a positive correlation between comfortable pitch ranges and the ability to match pitch. Geringer, Nelson and Kostka (1981) discovered that a higher percentage of children could match pitches in the range of c1-e1 than in the ranges of g#1-b1 and f1-f#2.

In earlier writings of Goetze (1981), several conflicting viewpoints concerning use of lower and higher registers in children's singing are discussed. At the same time, training of the upper register is encouraged:

> Despite the differences in these points of view and in implications of research, music educators and researchers share the primary objective end; that is, singing should become a source of pleasure for a child which continues throughout his life. If head register singing is not a skill which is developed with care, and if in classroom singing, songs are pitched high while children drone along a fourth or fifth below in the chest voice, then this affective goal is not being met. . . . If properly developed, the higher voice can be seen as an important means of reaching these affective goals. Hopefully, teachers will become sensitive to voice quality, range and registers and lead children to discover the joys of singing and the wealth of beautifully vocal literature a higher range makes possible. (p. 14)

Studies conducted in the early and mid- twentieth century directly devoted to measurement of vocal range and connections to pitch matching abilities were further extended by later studies which found positive correlations between vocal register coordination, vocal range and pitch matching abilities. The following recommendations

put forth by Apfeldstadt (1982) prompted research that was conducted in the latter part of the 1980s and 1990s:

> Although most of the research literature cites narrow, low ranges as predominant, the studies which suggest that children's ranges are fairly wide present an intriguing contradiction . . . There appears to be little actual research in children's vocal production . . . Voice production may be the link between research studies which support low range and those which stress higher ranges . . . We need to investigate the relationship between voice production as it relates to registers and to range. (p. 4)

Apfelstadt also recommended further research related to vocal production and vocal models in the child's environment. In response, Green (1987) concluded that the easiest vocal model for young children to imitate is that of the child voice, followed by adult female and male models respectively. Brown (1988) studied the coordination of registers in combination with vocal range. Results of her findings indicated that children demonstrated a significantly wider vocal range than previously thought and could sing in higher range extremes. Wurgler (1990) conducted studies on the child voice in relation to vocal registers and vocal production. She emphasizes the importance of vocal training with differentiation between the speaking voice and singing voice. Of special interest is Wurgler's subjective use of the words "true", and "natural" in regard to head tone: "The speaking voice develops from daily use. The head tone, the true singing voice of childhood, is neither 'natural' nor in daily use of any purpose other than singing" (p. 143). Wurgler concludes:

> The true singing voice of children, the head voice, must be taught just as any other physical skill is taught, along systematic guidelines . . . teachers are going to have to devote a small amount of time to group vocal techniques. The skill of managing one's singing voice smoothly throughout the full vocal range does not appear to happen solely as a function of age . . . teachers must teach vocal production—the sounds and the feel of a well balanced voice. (p. 123)

Wurgler recommends that the combined use of the song approach and formal approach would provide a complete vocal education for children.

McGraw (1996) also recommends a return to the formal approach to train children's voices and strongly advocates the philosophies of F. E. Howard. Her research documents that children form singing habits—both good and bad—by the age of eight. "In light of current practices which encourage singing in the lower range, however, results of this research support the view that vocal training is critical for all children in the primary grades" (p. 209). She writes:

> The reviewed studies on vocal registers clearly indicated that training children to sing using head voice is of fundamental importance for the child's long term vocal development. Based upon results of the reviewed research literature on vocal registers, it was believed that children in elementary school general music classes could be trained to use head voice for singing. Children in this study were regarded as potential sopranos, and it was believed that children would be able to sing comfortably in expanded range with head voice training. (pp. 109-110)

In addition, McGraw disagrees with earlier research which concludes that the "natural" voice of the child voice is much lower than once believed. She argues that the children surveyed had not been taught how to access the upper adjustment. If these children had not been taught to access their upper registers they would naturally choose lower pitches to sing. Therefore the logical conclusion would be that repertoire found in school music series of the time would not be accessible by the child. McGraw summarizes:

> It would appear that the singing ranges in children's series music books have been lowered in response to research which did not consider the relationship between vocal range and vocal registers—and the effect has been that of limiting the vocal development of children . . . in summary, pitch accuracy studies which have investigated the relationship of pitch discrimination and pitch accuracy have reported conflicting results. Some studies have suggested that subjects were able to discriminate differences in pitches but had difficulties with (singing) production responses. (pp. 37-44)

According to McGraw, vocal production and the ability or inability to negotiate register shifts greatly affects the ability to match pitches. McGraw concludes that music educators must teach children proper vocal coordination rather than limit the child to a vocal register that is most *comfortable*. If proper vocal coordination is taught, children would essentially be led to feel "comfortable" and "natural" in the upper register as well.

Goetze (1998) shows a marked shift in attitude toward the training of the child voice, indicating a significant change in philosophy regarding vocal registers after many years of studying and writing about the child voice:

> The primary change in my thinking about teaching children to sing is in the degree to which I currently emphasize singing in the "light" or "head" register. In the past, I have strongly advocated that teachers teach children to sing in the head voice to the exclusion of singing in the "chest" or "heavy" register. . . . I still believe that it is critically important to acquaint students with the light mechanism, but they should not be told that it is the "singing" voice or the "right" voice . . . it is simply one vocal register used in singing which is most useful when singing higher pitches in some styles of music . . . children should also be trained to use the heavy mechanism or chest voice and to move smoothly between the two registers. (p. 27)

> My naïve ethnocentrism was also revealed in echoing unquestioningly the argument that the light mechanism is healthier, suggesting that singing in other ways is unhealthy. While it is true that there is more "collision" of the vocal folds in phonating in the heavier mechanism, there is nothing unhealthy about it. . . . I now recommend that we teach students how to take care of their voices. (p. 27)

> In leading students to explore unfamiliar methods of vocal production, teachers should educate students about their voices with sensitivity to individual limitations. It is my finding that with careful conditioning and sensitivity to vocal fatigue, the exploration of multiple vocal styles can be done without risk and may even contribute to vocal facility and endurance. (Goetze, 2004, p. 11)

Despite the considerable body of research concerning pedagogical approaches to range and register coordination, few studies to date concern the training of lower register coordination and/or belt voice with children. Due to the strong influence of popular

musics, it is generally expected that children will explore the lower register or belt technique. Music educators need to become familiar with the training of the lower adjustment. While child vocal pedagogues do encourage exploration of all vocal registers (Edwin, 1998; Goetze, 1998; Phillips, 1992; Thurman & Welch, 2000), there are no longitudinal studies concerning the physiological aspects or pedagogical approaches for children's use of the "chest" or belt voice, and very little pedagogical literature written concerning approaches to training the lower adjustment or belt voice of the child.

Through the validation of esteemed voice scientists and pedagogues (Estill, 1980), there is more and more interest in lower register vocal production and belt voice, especially for adults; however, disregarding the fact that there is no hard evidence either to support or to critique, there are vague assertions and assurances that vocal production in this manner is safe for children:

> prepubertal children can learn to belt effectively and safely when their parents and vocal music teachers are thoroughly educated about its use. . . . [Belting] depends on how you do it. . . . We are reluctant to present suggestions for efficient belting in printed form. We prefer to present them live. We have the same reluctance about presenting suggestions for efficient operatic singing in printed form. The variables are too extensive, and the potential risks for misunderstanding are too great. (Thurman & Welch, 2000, p. 785)

By contrast, Allen (2004) provides other insights into chest voice training that are equally as vague as those given by Thurman and Welch:

> The development of the chest voice often can be approached effectively through the speaking voice, sometimes using spoken exercises designed by stage actors. However, this relationship of speech to singing is a two-edged sword. Because it can be approached from speech and is also an integral component of the Broadway and pop sound, chest voice now is frequently abused by untrained or misguided young singers who desire to be the next Annie or American Idol . . . an equally destructive situation occurs when adults, either by aesthetic choice influenced by pop culture or simply by using their comfortable low speech/singing range, train young children to sing in the same range. . . . The pervasive influence of popular singing culture often makes it incumbent upon the

> teacher to avoid chest voice entirely while training young singers in healthy and efficient vocal habits. . . . When it [chest register] is developed will vary depending on a variety of factors, but in most cases chest register advantageously can be introduced early in voice study. Only when abused does it cause vocal damage. (pp. 267-268)

Current Pedagogical Approaches

Placing pedagogical perspectives in a historical context regarding upper and lower register development reveals many conflicting beliefs and opinions. Many questions are slowly being addressed concerning vocal pedagogy in the twenty-first century. Delp (2001) asks: "Should current performance styles evolve from our methods of teaching singing or should our methods of teaching singing respond to current styles of performance?"

The following section will reveal how current approaches to child vocal pedagogy still do not provide specific methodologies for training the lower register as thoroughly as the upper register; however, they do suggest both a renaissance of the formal approach to singing development of the child voice and a continuation of the song approach.

Teaching Kids to Sing

Phillips (1992) published one of the first research-based texts to present a systematic approach to vocal techniques designed exclusively for the young singer. Teachers are led to understand the nature of children's voices and that of the adolescent voice through clear physiological explanations and reviews of academic and scientific research.

Phillips devised a detailed vocal-technique curriculum for young singers from grades one to twelve. Phillips discusses specific techniques to address the five basic areas of singing: respiration, phonation, resonant tone production, diction and expression. He

describes his main goal to "lead young people through a developmental program of psychomotor skills that will result in confident and expressive singing" (p. xi) as somewhat unique in that it deals first and foremost with singing technique. Phillips believes that the systematic training of children's voices should begin at an early age. A staunch advocate of the formal approach to the training of singing, Phillips writes:

> Elementary methods texts emphasize the song approach almost exclusively. It is uncommon to find in such sources any directives to the actual training of the child voice. The song-approach to literature often neglects such technical areas as vocal quality, registers, dynamic level, duration, and range. The mastery of singing technique is not presented as a developmental skill. (p. 4)

Phillips's own philosophy is based on the development of psychomotor skills, taking into account factors that influence pitch perception, tonal memory, vocal coordination and inaccurate singing. In relation to training vocal registers, Phillips writes:

> Complete dismissal of the lower register (chest voice) is not advocated in the present method for children's singing. What is taught is a three-register (upper, middle, and lower) approach. . . . Developing the upper, middle, and lower registers in young singers' voices provides for exercise of the total voice and prepares the way for a healthy passage into adolescence. It also results in a fuller tone quality that is more appealing to young people. While belting in the lower adjustment must be guarded against, so must a lifeless sound, devoid of any lower quality. . . . Vocal exploration and vocalises must emphasize the upper voice so as to establish its existence and habitual use in singing. Downward vocalises and song phrases will help to blend the upper voice into the lower voice between d^1 and a^1, the best tessitura for songs in the primary grades. If the sound is kept light (but not lifeless) in this middle voice, the two registers will begin to blend automatically. Loud singing will result in all lower registration. (pp. 43-47)

Phillips's detailed curriculum works in a sequential manner incorporating ninety exercises throughout a period of twelve years over the five basic areas of vocal development. The curriculum is highly descriptive with many suggestions for vocal experimentation and discovery as well as highly detailed methods for assessment.

Despite the lack of information concerning the development of the lower vocal mechanism, *Teaching Kids to Sing* is a wonderful guide for music educators, providing clear, sequential steps—nearly in recipe format—for training the voices of children at all ages.

Bodymind & Voice

Initially published in 1997, *Bodymind & Voice* is the result of a cooperative effort between a number of voice care professionals in the United States and Great Britian. Supervised by Dr. Leon Thurman from the VoiceCare Network in Minneapolis, Minnesota and Dr. Graham Welch from the University of London Centre for Education, it is a seminal work that combines the most recent scientific research concerning all aspects of the use of the human voice. Funded by the United States National Center for Voice and Speech, the basic mandate of this publication was "to make research in the area of voice and speech more accessible to the consumer" (p. ix). It is a comprehensive five volume series that combines science-based research with practical education methods. *Bodymind & Voice* is not devoted exclusively for the training of children's voices, but devotes a considerable amount of space for discussion of issues concerning the child voice, including child vocal development and vocal mutation of male and female adolescents.

Thurman and Welch (2000) advocate "human compatible" learning that embraces the nature of the body at various ages and stages as connected to the mind and connected to the voice. It is a holistic approach to teaching singing based on research and scientific research. Thurman and Welch encourage a Pestalozzian approach to vocal pedagogy that starts where the singers are and moves accordingly to realize both capabilities and

abilities. Although not a prescriptive text, it provides methodology based on the most current scientific research and pedagogy, focusing not only on skills, concepts and techniques, but on the human capacity for learning. It does not suggest a particular body of repertoire, but does offer a vast amount of information regarding physiology and pathology. It also includes a series of recommended vocal exercises.

Thurman forecasts an interesting pedagogical future for all professionals involved in training the human voice. Thurman's ambitious list of "science-based, futurist megatrends" for voice education by the year 2100 holds serious implications for the future of singing in all styles, including choral music:

1. The practices of vocal and choral pedagogy and speech training will be globally grounded in the theory and research of the neuropsychobiological sciences, and the related voice and voice medicine sciences.
2. Terminologies and practices within the historical traditions of vocal and choral pedagogy, and in speech training will have been replaced or modified, when necessary, so as to be consistent with terminologies and practices that have been derived from scientific theory and research.
3. Speaking and singing will no longer be thought of as separate skills, so that the terms speaking voice and singing voice will be quaint anachronisms.
4. The term vocal pedagogy and speech training will be replaced by voice education, so that all singing teachers, choral educators, general music educators, and speech and theatre trainers will regard themselves as educators of self-expression for the societies in which they live.
5. Voice educators will use developmentally-appropriate, "human compatible" teaching-learning processes that are grounded in the theory and research of the psychobiological sciences.
6. Voice educators will be: comprehensively skilled and experienced in . . .
    - Teaching basic, physically efficient "flow" voicing for use in conversational and presentational speaking, acting, and the singing of art songs and ballad-oriented folk and popular music;
    - Teaching special enhancement of high-frequency vocal harmonics for use in Western civilization "classical" acting and operatic singing
    - Teaching high-volume "belted" voicing for use in outdoor or unamplified speaking, cheerleading, and acting, and in the singing of folk, spiritual, gospel, musical theatre, and popular musical styles

- Teaching non-nasal "twang" singing in folk, bluegrass, and country-western music
- Teaching efficient special-effect voicing for vocal impersonators, mimics, comedians, and actors who use "character voices", and for actors and some rock and rhythm & blues singing who must scream; and
- Advising singers of music from other cultures.

7. Rehearsal teaching in choral ensembles will evolve toward vocal and musical autonomy. Skilled choral ensembles will rarely, if ever, perform with a conductor in front of them because the implicit procedural skills of singers will be richly developed. As a result, voice educators can be members of the singing ensembles that they lead. As voice and music education evolve, therefore, voice educators will become less and less "necessary" –never unnecessary. (Thurman & Welch, pp. 848-849)

From an early twenty-first century vantage point, this list seems to be highly unrealistic, assuming that voice educators will have the capacity to "do it all." In addition, Thurman neglects to address child vocal pedagogy—an important area that truly provides the foundation for singers of the next century.

Songworks

In the foreword to *Songworks,* Bennet and Bartholomew (1997; 1999) state: "we have reached a point in America where singing is at risk" (p. xi). As music surrounds children everyday in every form imaginable, they no longer need to sing to experience music. In addition, with an increasingly crowded curriculum in schools there seems to be very little room for music.

Bennet and Bartholomew advocate singing as a creator of community, as a way of enhancing personal life experience, a form of expression and intellectual endeavour. Like Phillips, they suggest a practical approach to teaching singing in the classroom. Like Thurman and Welch, they place a strong emphasis on the training of the whole child, approaching singing with tolerance and acceptance of each individual student, their unique cultural background, and their particular stage in vocal development.

Bennet and Bartholomew recommend a vast repertoire of unaccompanied folk songs to teach, sing and enjoy. Their methodology is based primarily on the song approach to voice education. A large repertoire of songs is taught through *Songworks*. The songs are taught in a variety of ways either by rote, non-conventional notation or conventional notation. The songs are not taught in any specific order and are usually taught alongside a game or physical movement.

In regard to suitable range for repertoire, it is suggested that while leading singing, teachers

> choose a starting pitch that is somewhat higher than the pitch of your speaking voice . . . use a light, lifted singing voice. Breath energy will help keep your voice light and airy (in contrast to heavy and raucous) as a good model for children's voices. (p. 65)

The *Songworks* approach focuses on exploration, leading young singers to discover their voices through experimentation. Teachers create a positive atmosphere in their singing classes. They ask children questions in order to elicit verbal responses that will establish an awareness of healthy singing behaviour. While Bennet and Bartholomew do not recommend any specific exercises, they do suggest vocal warm ups that encourage bringing vocalizations from upper register downward.

Aside from a brief reference to singing with a light mechanism, tone or voice quality receive little attention. They write:

> The best way to sing folk songs is by heart and from the heart. Our enthusiasm and joy in singing are the most important factors in sharing songs with children and others. . . . The simple beauty and spirit that have preserved these songs through decades and centuries, however, are what you most want to communicate when you sing them. (p. 222)

Their philosophy and commitment to the democratic nature of the song approach is perhaps best described by a quote from Ruth Crawford Seeger:

> It [children's folk music] is not a music to be worshiped from afar and performed only by those with special gifts or intensively acquired technique—yet it partakes of the quality of greatness. To enjoy it, one need not dress up either oneself or one's voice. (Seeger, 1948, as cited in Bennet & Bartholomew, 2001, p. 222)

Choral Pedagogy and Methodology

For centuries, choral singing has been established as a form of vocal education through churches, schools, and community organizations in the Western world. Prior to 1950, choral conductors in North America focused their choral work on rehearsal technique, working toward a specific sound ideal specified by the conductor. Choral musicology was the dominant mode used to educate choral conductors. According to Thurman (1999)

> after 1980, choral conducting education began to include voice skill and voice health training, and the term choral pedagogy became popularized. The source of the vocal training have been teachers who are educated in the tradition of vocal pedagogy with operatic bias. (p. 49)

According to Ashmore (1995) the children's choir movement has strongly influenced child vocal education. For centuries, children's voices have been used in highly proficient choral settings in Europe. In North America, the virtuoso children's choir movement is relatively young. Over the past thirty years many children's choirs of extremely high quality have been established in North America. These organizations, led by knowledgeable music educators and conductors, establish and promote excellent vocal training for their choristers. They publish helpful materials for music educators as practical guides for training the child voice. These choral methods adhere to the sound ideal inherent in the choral music for children within the Western classical canon. Singing in the upper register is a primary goal.

Conductors such as Frauke Haaseman, James Jordan, Doreen Rao, and Jean Ashworth Bartle have made great contributions to the training of the child voice, establishing standards for repertoire and sound ideal.

The following statement clearly articulates the philosophy of Haaseman and Jordan (1991) for the training of treble voices:

> One of the central elements that contributes to a flexible and beautiful vocal sound is head tone. Head tone, the sound of the pure upper register, must be cultivated in all singers, but particularly in women and children. (p. 62)
>
> The cultivation and nurturing of head tone is perhaps the single most important factor in the development of a healthy singing instrument. (p. 84)

Rao (1987) combines the formal and song approach to vocal education by teaching vocal technique through the study of choral repertoire:

> The purpose of vocal technique is to learn to do something musical. The student's ability to experience and express the ideas and feelings of music is significantly increased with the development of vocal technique. Through the skilled action of singing the student physically re-creates the composer's ideas, giving "life" to the music. A musical approach to the development of vocal technique avoids separating technical learning from musical experience by emphasizing the relationship between vocal technique and the musical purpose it serves. The physical manipulation of music through good singing posture, breath management and healthy tone production serve as means of focusing on the music, increasing musical sensitivity and exercising musical imagination. Vocalization transforms the human voice from a sound generator to an instrument of musical expression. Musical experience depends on the discipline of vocal technique. (p. 6)

Rao recommends an objective response to singing that encourages young singers to view their voices as an instrument like other instruments. Through objective training of their vocal instrument, personal feelings are released, allowing technical matters to be taught without self-consciousness. Rao recommends the exploration and examination of notable vocal traditions present in the world today. "It is important to provide a

continuum of vocal style from jazz to opera; from folk to composed, including chants, throat singing or yodeling." (p. 9).

In regard to head voice and chest voice, Rao writes:

> The "chest voice" can be potentially damaging for the young singer because it is generally produced without sufficient breath too far back in the throat. Although "chest voice" can be healthfully produced, it is not recommended for beginning singers because of the complex vocal transitions necessary throughout the singing range. Inevitably, chest voice is associated with the most popular music familiar to the young student. For that reason alone, it should be avoided. The range of chest voice is generally limited in its usefulness. "Head voice" is a healthy and useful singing mechanism because it is produced from the thinning of the vocal folds, and it resonates in the head area. (p. 18)

Rao (1993) demonstrates her philosophies in a choral music curriculum that embraces vocal technique, music literacy and awareness of creative vocal expression through repertoire modules.

Ashworth Bartle (2003) writes "that all children can and should learn to sing" (p. 3). She asserts that the quality of the singing voice of the teacher is essential in order for children to establish good vocal tone. Ashworth Bartle recommends that in order for children to find their singing voices they must start from the speaking voice. A brief series of vocalises are provided that combine the development of singing technique alongside musicianship.

Ashworth Bartle writes at length about tone quality. Like Helen Kemp, and in keeping with the philosophy of the formal approach to singing education, Bartle maintains definite views concerning tone quality, specifically that which she calls "exquisite tone":

> The tone of a children's choir is more a reflection of its conductor than the collective sound of individual voices. While membership varies from one year to the next, the tone of the choir under the same conductor remains remarkably consistent. Each conductor has his or her own concept of exquisite tone. . . . The

qualities of exquisite tone that one should try to develop in young voices are the following:

1. Ringing: A ringing or resonant tone has a buoyancy and projection that is thrilling to the listener.
2. Purity: A pure tone, unencumbered by excessive vibrato or a distinctive color, has clarity and sweetness.
3. Freedom: A free tone is completely unrestricted. It is without any form of tension. It is not driven or forced. It brings a sense of composure to the listener. (p. 15-16)

In summary, Haaseman and Jordan, Rao and Bartle maintain three unique positions that are relevant for further discussion in Chapter Three:

1. "Pure" head tone is synonymous with health and should be cultivated by both women and children. (Haaseman & Jordan)
2. Children physically recreate the ideas of the composer (Rao)
3. The tone quality of a choir stays remarkably homogenous, considering that membership changes from year to year. (Ashworth Bartle)

Repertoire, Vocal Range and Registers: The Graded Music Series

During the past one hundred and fifty years of standardized music education, materials and resources appear to reflect contemporary educational philosophies and teaching methods. Traditionally, reputable music educators edit graded music series intended for use in a school setting. The series are a collection of various types of musics—folk, classical, traditional melodies—with some music composed primarily for didactic rather than aesthetic purposes. I believe that the repertoire contained within school music series best represents general trends in the education of children's voices throughout the past century.

Much scholarly research exists concerning repertoire for children in the public schools. Reasons for the substantial numbers of studies pertaining to school music series are obvious:

1. School music series provide a finite body of literature that can be measured, manipulated, compared and contrasted.
2. School music series generally rely on the research and advice of academics at the university level in faculties of education.

In North America, the earliest singing schools from the eighteenth century were closely connected to the church. The schools were established to enhance music reading for the singing of new psalms and hymns in the churches for both adults and children. These schools not only "tuned" the voices of singers through scales, arpeggios, and intervals, but also enhanced the understanding of psalms and biblical texts.

Early singing masters decided on the appropriate range for the singing of songs through the following rustic process:

> First observe how many *Notes* compass the *Tune* is. Next the place of your first *Note*; and how many *Notes* above and below that: so as you may begin the *Tune* of your first *Note* as the rest may be sung in the compass of your and the people's voices, without *Squeaking* above, or *Grumbling* below. (1698 edition of a psalmbook as cited in Gates, 1990, p. 44)

During the nineteenth century, teaching manuals and children's singing tutors were designed and published. These publications contained vocalises, vocal exercises, drills and short songs in unison or in parts. The songs included in the music series were written with specific ranges considered appropriate for children. The songs were written primarily with pedagogical goals emphasizing ear training and music literacy, often

containing songs bearing inspirational, or value-laden texts which held strong moral significance.

In 1860, Luther Mason published the first graded elementary school series in North America. These early series songbooks contained songs published primarily in the key of C. Wilson (1970) states: "During the early years of public school music, all training in singing began in the key of C. Song books were published in lower keys and children were allowed to sing at low comfortable pitch levels" (p. 22).

In the late nineteenth century and early twentieth, the vocal range of music printed for children complied with the research and recommendations of F. E. Howard. For the first three years of school, Howard recommended that the range of songs published in school music songbooks be within a compass of e1 to f2 with a tessitura of b1 to g2 (Rutkowski, 1985). Most songs in music series of this time were published between e1 and e2. This not only satisfied the recommendations of those responsible for the cultivation of children's voices, but also reflected practical necessity and ease for music publishers to avoid ledger lines. Children were expected to conform to the ranges considered appropriate for them. This expectation will be of particular relevance to social issues discussed in Chapter Three.

Howard (1898) was particularly critical of music published for children at the time. From his perspective, much music published for children encompassed a range that was more suitable for a contralto. He states:

> An error, started anywhere or at any time, of theory or of practice, if it once becomes incorporated into the literature of a subject, is liable to be frequently copied, and enjoy a long and useless life. So with this treatment of the child-voice, the error is in supposing that it consists of a limited number of quite low tones. The error has its origin in the sole use of the so-called chest voice of the child, and when the evident strain under which a child of six or seven years labors

> to sing up is observed, the conclusion seems safe that they cannot sing high. While, on the other hand, they manage with apparent ease to sing down even as low as *a*. . . . This conception has in divers ways so imbedded itself into the musical literature for little children, that all efforts to uproot it have so far been apparently futile. There are, however, very many supervisors of school music, and the number is growing, who have recognized that this treatment of little children's voices is a vocal barbarity, and the device of pitching songs higher than they are written to overcome the difficulty is more common than might be supposed. There can be no doubt that in a short time the practice of carrying the tones of little children three and four notes below the first line of the staff will not be tolerated. (p. 72-74)

Weld (1910) noted that children preferred a lower singing range than what was found in music songbooks of the time. He writes:

> if these results are true for American children, the music offered them in the first four grades is certainly too high in pitch. It is quite true that 25 per cent of the children have a greater range; but great harm may accrue to the majority, by forcing them to sing notes, easily possible, only to a few. (p. 156)

In contrast to Weld's conclusions, Rix (1910) states:

> There has been a great misconception of the child-voice by singers and composers, as well as teachers, since children, if left to themselves, will sing in the same voice with which they shout in their play. Composers of children's songs, by writing in a contralto range, have added another difficulty to be overcome when we endeavor to teach children to sing properly. It is necessary, therefore, in such cases, for the teacher to pitch the songs in higher keys, so that they may be sung in the head voice. This may be done regardless of the original, by choosing a key that brings the upper and lower tones within the limits of the staff. (p. 11)

McGraw (1996) summarizes pedagogical approaches and attitudes toward vocal training for children in the first three decades of the twentieth century:

1. Music series books pitched songs so as to encourage the use of head voice from the earliest grades.
2. Music series books provided information on training children in head voice production for practicing teachers.
3. Teacher training included instruction for propective [sic] music teachers on vocal training for children.
4. The use of chest voice for training was discouraged.
5. Teachers were encouraged to develop beauty of vocal tone in conjunction with developing technical skill in head voice production.

6. Group vocal training was considered appropriate and desirable for elementary school children. (pp. 57-58)

Melodies from well-known opera arias and art songs as well as popular themes from instrumental music with addition of texts suitable for children were primary sources of material for these early twentieth century songbooks. At this time, graded music series contained very little folk music. As the century progressed, more and more folk material was incorporated into the music series and the inclusion of opera arias and art song steadily decreased.

Shull (1961) concluded that the inclusion or exclusion of repertoire for children composed by 'distinguished' composers hinged on several factors related to vocal range. He discovered that some of this repertoire held "larger range requirements than series songs. While this is not a major contributing factor, a few songs which require singing notes below small a-flat would be omitted on the basis of ranges observed in the three series studied" (p. 78). He also noted that much of this repertoire contained

> extended period in high or low tessituras. Although there have not been definite standards or norms devised which state how long children should sing in either high or low extremes of the voice, some of the children's songs require longer periods in the range extremes than are commonly found in series songs. The length of time singing in high or low ranges depends to a great degree upon vocal training children receive and grade levels performing the music. (p. 78)

Music series of the 1950s showed a distinct trend supporting the use of the song approach for children's voice education. According to Wilson (1970), writers of these song series advocated head voice training and advised of the dangers connected with singing using chest voice:

> The writers stated that the compass of the free unrestricted voice of the boy or girl is wide, approximately from middle c to the c above the staff, but to protect the voice the compass of songs should be limited to within the staff. They said that classes that choose themselves will always use the chest voice and pitch their

> songs much lower. The writers contended that the use of this voice would inevitably induce injurious and dangerous vocal habits. Since the use of the chest voice was considered exceedingly dangerous, the safe procedure was to avoid the chest voice altogether. (p. 36)

Despite these recommendations, the practice of using a prescribed, standard set of ranges for children's songs in music series was questioned during the 1950s. Van Oordt and Drost (1963) write:

> It is interesting to study the demands made by classically performed songs. The range and pitch of a song which is easily reproducible by every child of a given age group lies between the lowest found [speaking] and the highest registered musical tone [singing] and the highest found [speaking] and lowest registered musical tone [singing]. This is not to say that no higher or lower tones occur in that song. It is, however, necessary to be aware that in such cases the voice has yet to form itself outside that range. An all too thorough disregard for the very real limitations of the musical voice range of the child has led to the inclusion in the repertoire of the wrong songs, songs which go too far beyond the musical possibilities of a given age. (pp. 294-295)

Wilson (1970) summarizes attitudes to vocal range and the cultivation of the child voice apparent in the 1960s and 1970s. Music series of the time approached the issue of vocal range with more flexibility, recognizing individual differences and limitations.

> After one hundred and thirty years, the singing range used by Lowell Mason may yet be validated. Only research will determine whether the conclusions of Howard or of Mason were correct. The principles of Howard are still evidenced in contemporary writings, but the trend is toward lowering the pitch range. The possibility that individual differences in voice range exist should be accommodated is a new development in the literature of the child voice. (p. 52)

> Writers of school texts for kindergarten and first grade and music methods books written in the past five or six years now recognize the need for a flexible pitch range for songs to accommodate individual differences. . . . The key in which the song is published is no longer held sacrosanct. . . . Experts now recommend that . . . music be adapted to the child, not the child to the music. In recent years, the trend in publishing songs for these groups is toward lower keys. (p. 3)

Wilson concluded that the comfortable range of children's singing voices was significantly lower than the range and tessitura of music published in series prior to 1970.

She recommended that the appropriate range for children's singing should lie primarily between a and a1.

Wassum (1979) made repertoire recommendations to music educators concerning vocal range. She discovered that "vocal range develops as a factor of the growth pattern" and recommended that music educators "use songs that are written in keys that will not exceed the lowest nor highest ranges for most children of that age." She also advised that teachers "select some songs with wide ranges to stimulate vocal development of gifted students" (pp. 225-226).

Research during the 1970s connected poor pitch matching ability with unsuitable vocal range of repertoire for children. Welch (1979) states:

> It would seem, nearly a century later, that the practice of fitting children's voices to the published repertoire, rather than the other way round, is still prevalent, and could be construed by the uncharitable onlooker as one of the prime causes of poor pitch singing. (p. 25)

Diaz (1981) analyzed twenty-five elementary school music series published in the United States between 1926 and 1976. Her analysis included the origin, meter, vocal range and scale derivations of all songs. Diaz noted that during the fifty-year period studied, educational objectives changed significantly. She also noted that emphasis on singing as the primary activity for music education decreased between 1926 and 1976. She found that the total number of songs within the series decreased. "The average number of songs per grade level in each series decreased from 182 in the first period to 93 in the final period, a decrease of nearly 50 percent" (p. 473). In relation to vocal range, Diaz writes: "Although the ranges of songs decreased throughout the fifty year period, the ranges of songs in each series increased with the grade level" (p. 478). Within the fifty year period, the sources of songs in the music series changed from repertoire

dominated by Western European folk songs and songs composed by the series' authors to increased use of folk song from the United States, Eastern Europe and other parts of the world. Music written by recognized composers was also included.

Kavanaugh (1982) investigated recommended methodology and materials in selected music series published between 1945-1975 as related to the development of vocal concepts. Kavanaugh analyzed suggested vocal characteristics and terminology used to describe the child voice. Kavanaugh listed terminology used by music educators to describe characteristics of tone quality that will be of particular relevance in Chapter Three: "natural, head tone, clear, light, delicate, flutelike, soft, fine, ethereal, sweet, thin, colorless, chest tone, heavy, dark, thick, hearty, boisterous, harsh" (p. 232).

Kavanaugh also reviewed singing objectives and teaching strategies. She noted that earlier music series contained the most suggestions concerning desired tone quality as well as information regarding the child voice:

> Music series published during Era A, 1945 to 1954, provided the most information about the child voice. The quality is described as being light and clear, sometimes having tendencies to be shrill, thin, and colorless. The ultimate goal is to help children discover their head tone which is the most desirable quality to cultivate. (p. 259)

Kavanaugh found that more occasions for upper register development appeared in earlier publications:

> the opportunity for range development was more prevalent in the earlier publications. The song ranges were much higher and vocal exercises, designed to explore all areas of vocal register, were provided. Content analysis tabulations for objectives related to range development dropped drastically in the last two decades. Furthermore, the songs do not offer opportunity for range expansion. (p. 262)

> The melodic range of songs in the Era A series was quite high going to F4. Lower ranges were noted in the Era B [1954-1965] and Era C [1965-1975] publications generally being in the vicinity of C4 and/or D4. (p. 264)

According to Kavanaugh, the amount of information provided to music educators in music series regarding child vocal development decreased between 1926 and 1976. She makes the following observation and corresponding recommendation for future music series:

> Great diversity is noted in the objectives that require singing, ranging from well developed programs designed to cultivate the voice to programs in which the voice is simply to be used as a performance medium. . . . Researchers have been concerned with discovering more about the child's singing capabilities. If the authors of music series give credence to the findings of these projects, they do not let it be known. . . . Music series do not yet contain adequate information about the physical characteristics of the vocal mechanism. (p. 267)

Apfelstadt (1982) writes that a "wide gap exists between ranges defined by research and those used in elementary music books" (p. 5). Apfelstadt examined vocal ranges of elementary music text series between 1914 and 1981.

> Although early research had defined the young child's range as c'-a', the 1914 edition of The Hollis Dann Music Series—grade one used both a wide range (eflat'-f"), [e-flat1-f2] and a high tessitura . . . Clearly, these ranges over-extended the natural compass as shown by then-current research. Indeed, textbooks published through the 1950s followed suit. (p. 5)

Apfelstadt (1982) provided two possible explanations for publishers of elementary music series for their use of high, wide ranges:

1. Wide ranges may have been considered suitable for the potential or trainable limits of the child voice.
2. Music may have been written on the staff e1-f2 for music reading purposes to avoid possible confusion over ledger lines

Apfelstadt's survey revealed that the use of wide ranges in music series continued through the 1960s, although the publications at this time also made allowances for the

increased vocal range and tessitura that naturally occurs for young singers between grades one and six. Apfelstadt concludes:

> Texts of the 1970's showed a slight dropping of range in the early grades . . . song ranges of elementary music texts have lowered in the past 65 years, and more recent series have acknowledged the gradual expansion of range with age. (p. 5)

An interesting study by Mizener (1993) examined the opinions of children in relation to published music series. Approximately 550 American students were interviewed between grades three and six in order to establish attitudes toward singing in relation to assessed singing skill. In response to the statement: "The songs in our song books are 1) too high and hard to sing, 2) too low and hard to sing, or 3) just right and comfortable to sing", Mizener noted that the number of students indicating that songs are "too high and hard to sing" increased significantly with age (i.e. 6% in grade 3 as opposed to 28% in grade 6).

McGraw's (1996) study of music series from the late twentieth century concurs with that of Kavanaugh and Apfelstadt. McGraw states that "music series books have provided little or no information on the development of the child's singing voice" (p. 6). In keeping with Bennet and Bartholomew's statement concerning singing at risk, McGraw also believes that throughout the course of the twentieth century a "decline in the level of children's singing skills" (p. 8) occurred. She cites a number of potential explanations:

1. An emphasis on the learning of song repertoire has replaced an earlier twentieth century emphasis on vocal training.
2. Inadequate college-level preparation of music teachers.
3. A dearth of information on training children to sing in music series books.
4. Children (and teachers) are influenced in their singing by performers in the popular arena, particularly rock singers. Children imitate these entertainers in their use of a heavy chest voice for singing. (pp. 6-7)

In a more recent study, Welch (2001) maintains his earlier position concerning the choice of appropriate keys found in songbook series. He recommends that:

> we also need to be cautious about the choice of musical keys that the songs are sung in. Initially, the majority of children entering school have a limited comfortable sung pitch range in which they are capable of matching pitches accurately. This may be a different (usually lower) than the pitch as printed for the teacher in her source book. (p. 36)

A recent music textbook, approved by school boards in Canada and the United States entitled *Share the Music* (Bond et al, 1995), is an excellent example of a more inclusive approach toward developing children's voices reflecting the position of Goetze (1998). The bright, appealing pages of the student texts contain non-judgmental statements such as "different ways to use your voice". Listening examples of such diverse artists as Bobby McFerrin and Kathleen Battle provide a variety of vocal models for children to hear. The texts guide children through the process of discovering and distinguishing both their lighter voice and heavier vocal mechanism without making judgments as to which is right or wrong. In addition, the texts provide children with open options to explore the use of their voice and make "choices with voices" (Volume 4, p. 10). The teacher's edition includes sporadic suggestions for vocal development, plus recommendations for establishing good posture, breath and phonation.

Repertoire, Vocal Range and Registers: Choral Music

Early and mid- twentieth century England produced much repertoire composed especially for children in the form of unison choral songs. Publishers such as Curwen, Boosey & Hawkes and Oxford published a large amount of music for children by such composers as Thomas Dunhill, Eric Thiman and Benjamin Britten. This music was published for either children's solo singing or for the development of fine unison singing

in choir. This music was intended for school music programs. Texts of this music often included poetry of Shakespeare, romantic English poets, children's rhyme or nonsense texts. Themes commonly include nature, lullabies, childhood poems, folk tales, legends and patriotism and the songs generally had light, supportive piano accompaniments. The vocal range is as Howard recommended with the tessitura resting primarily between e1 and e2. Many of these publications are no longer easily accessible because they are out of print. Children's choirs programmed these publications for decades and in some organizations, continue to do so if scores can be acquired.

In the late twentieth and early twenty-first century, publishers of choral music for the schools are vying for an increasingly competitive, highly commercial market within the Western world. Refined marketing strategies and astute assessment of the current educational atmosphere determines what is bought and sold. In many schools in Britain and North America, the specialist music teacher is something of an anomaly. In response, publishers provide materials that are easily accessible to a teacher with minimal music training. Enthusiastic presentation and distribution of materials are obvious selling features. In addition, materials are designed with recipes for presentation, rehearsal and performance, including historical background of the music, teaching suggestions, and accompaniment CDs. This music is generally composed in a formulaic fashion, stylistically derived from folk music or contemporary popular music, primarily accompanied by the piano and including some kind of "choralography."

Texts chosen for this repertoire hold certain similarities to music published for children one hundred years ago. References to nature and settings of lullabies and folk legends remain. As shall be seen in Chapter Three, song texts for children reflect the

cultural setting; texts for late twentieth and early twenty-first century children's song literature embraces themes of environmental protection, self-esteem, racial and religious tolerance and understanding, world peace, political and patriotic agendas.

Although the body of literature is far too vast to make a precise measurement, from my experience, recent choral publications primarily intended for use in the schools generally explore vocal range and tessitura between a c1 and c2. It is not uncommon for these works to have melodies set on ledger lines below the staff.

Alongside choral repertoire published for school chorus, European, British and North American publishers from 1980 onward have begun to direct their marketing strategies to embrace the needs of auditioned school and select community choirs as well as virtuoso children's choirs. New editions and arrangements of classical compositions from all musical eras appeared, including unison choral editions of solo arias from oratorios by Handel, Bach or Mozart and art songs of Schubert, Chausson and Brahms, choral arrangements of jazz standards and demanding multi-part treble works. This body of choral literature embraces a wide variety of styles and genres. The vocal range of this challenging body of repertoire is wide with obvious technical demands especially for those singers assigned to the outer extremes of first soprano or second alto parts.

After attending a concert in Germany in 1854, Lowell Mason (1854) wrote:

> The singer did himself much credit indeed, but the chorus was a failure—the little things [children] kept along and got through with it, but no character was given to it whatever. It is not children's music. Children might as well be required to read Shakspeare (sic), as to sing Handel. They may hit the tones, but they cannot sing the music. (p. 18)

Judging from the number of excellent recordings available of fine children's choirs, it is clear that Mason's observations are not valid in the late twentieth and early

twenty-first centuries. If these fine choirs are taken as examples, McGraw is also incorrect in her assertion that the level of children's singing is declining. It is impossible to make a generalization concerning the state of children's singing in the Western world; however, considering some graded music series and choral literature designed for use by a non-music specialist, it is clear that Bennet and Bartholomew may be correct to assume that "singing is at risk."

Repertoire, Vocal Range and Registers: Popular Music

Because of the complex interplay between diverse geographic, economic, cultural, and social influences and interactions, and the countless number of studies analyzing the relationship between children and the media (Buckingham, 2000), it is difficult to trace the precise impact or influence of electronic media or print media on children. This issue will be discussed from a social and cultural perspective in Chapter Three; however, it is important to make concrete observations concerning audio-visual media sources, the manner in which children sing, and their use of vocal range and registers.

Children of the late twentieth and early twenty-first centuries experience more cultural stimulation than was possible at any previous time in history through widespread accessibility to information and communication technologies. Music comes to them in a variety of modes, in a variety of styles and genres. Music surrounds them at all times—at home on the radio or sound system, on the bus, in the car, on CD Walkmans, in the shopping mall. According to Mizener (1993) children's fascination with electronic media increases with age. When asked "In music class, I like it most when 1) we sing songs with the piano, 2) we sing songs with records or tapes, or 3) we sing songs without piano or records" 69% of all grade six students gave a positive response to the use of records

and tapes in contrast to only 43% of all grade three students responded positively to the same question.

Much music of the nineteenth century and early twentieth century was communicated to children via direct contact between parent and child, teacher and pupil, choirmaster and chorister or between children themselves in the form of traditional singing games. The music was presented in rote form or via a printed score. Children made music themselves in order to generate their own acoustical, musical world. Ashmore (1995) writes:

> A major objective of music education in the early twentieth century was to foster music appreciation and creativity in children. With the invention of the phonograph, numerous recordings were made and used as educational tools in children's music classes. Thus, the phonograph made it possible to introduce children to the music of different cultures, various musical styles, and the sounds of musical instruments. . . . There was less emphasis placed on teaching children how to sing, as traditional song singing was partially replaced by listening lessons and various music activities involving song games and folk dances. (p. 148-149)

With the advent of recording technology via cylinders, the invention of radio, electronic recording technology and television, children had the opportunity to hear music that did not originate from their immediate surroundings. From the mid- nineteenth century to the present day, the amount of printed, recorded and broadcasted music has grown exponentially; reaching an unprecedented explosion in musical stimulation that surrounds the children of today.

Many music educators have studied the effects of environment and vocal modeling (Chong, 2000; Green, 1988; Kirkpatrick, 1962; Rupp, 1992; Smith, 1973;). Significant and well-documented correlations exist between what children hear, what kinds of sounds they prefer to listen to, and how they sing. These conclusions are relevant when applied to issues concerning the influence of Western popular music and children's

singing voices. Frith (1987) writes of the important relationship between popular music and the singing voice:

> The development of popular music in this century has increasingly focused on the use of the voice. It is through the singing voice that people are most able to make a connection with their records, to feel that performances are theirs in certain ways. It is through the voice that the star personalities are constructed. The tone of voice is more important in this context than the actual articulation of particular lyrics—which means, for example, that groups, like the Beatles, can take on a group voice. We can thus identify with a song whether we understand the words or not, whether we already know the singer or not, because it is the voice—not the lyrics—to which we immediately respond. . . . Today's commercial pop musics are, though, song forms, constructing vocal personalities, using voices to speak directly to us. . . . The image of pop performers is constructed by press and television advertisements, by the routines of photo-calls and journalists' interviews, and through gesture and performance. These things all feed into the way we hear a voice; pop singers are rarely heard 'plain' (without mediation). Their vocals already contain physical connotations, associated images, echoes of other sounds. (pp. 145-146)

Teachers of singing hold particularly strong opinions regarding the relationship between the kinds of music singers listen to and their vocal production. Needham (1973) states: "A singing student who regularly listens to popular singers, folk singers, and the like, will never be able to preserve a good tonal concept, difficult of acquisition as it is under any circumstances" (p. 11). He continues with strong criticisms of the performance of popular musics:

> Stage productions . . . are, moreover, often accompanied by a sizeable orchestra or band. Such works, it must be remembered first, were invariably written for professional singers with mature voices, not untrained ones. I have to say that the thought of young immature voices butchering themselves on this block so readily provided for them by public approbation makes me almost physically ill. Rehearsals for several weeks followed by several consecutive performances: such extensive activity simply cannot be borne by untrained or semi-trained voices. (p.12)

Apfelstadt (1988b) alludes to the use and influence of popular music, citing ways that it can help or hinder developing children's voices:

> Appropriate vocal tone can be modeled by the teacher and through well-chosen recordings. It must be emphasized constantly if children are to avoid the kind of heavy chest voice production that they hear so frequently in the world around them. Pop singers who use microphones to amplify their sound may not damage their voices; children trying to imitate that sound and volume without the benefit of microphones almost certainly will. (p. 7)

Welch (2000) discusses difficulties and possibilities for incorporating popular musics in the curriculum, recognizing a:

> potential tension that often exists between the music of the wider youth culture (as experienced at home, through the local community and through the media) and the official musical curriculum of the school. . . . Interviews with children drawn from a class of inner-city ten-year-olds revealed a range of favourite singers, including the Spice Girls, Boyzone, Steps, B*witched and Michael Jackson. Whilst not proscribed by the primary school music curriculum, songs from such artists are unlikely to be taught, not least because the musical vocal style and the lyrics are non-traditional in terms of the dominant school culture. Furthermore, even if teachers were generally open to such song material, they are likely to be relatively inexperienced in such genres and so lack knowledge or confidence in how best to access such music pedagogically. (p. 37)

Miller (1997), an obvious traditionalist, strongly opposes the use of the popular or non-Western vocal idioms based on physiological and aesthetic grounds:

> Professional musicians are displaying increasing interest in ethnomusical literatures and in popular-music idioms. These forms of vocalism are aggressively invading the tonal concepts of traditional sacred and secular music, both in the church and in the concert hall. No longer do today's singers always receive instruction based on the ideals of beauty, strength, and health. Since the inception of the solo singer, these three criteria have provided the foundation on which the art of Western European vocalism has been constructed. Today, that is no longer necessarily the case. There even exists a current category of vocalist termed "the untrained professional singer" who is among the highest paid of all performers but who lacks the most rudimentary skills of the singing craft. . . . Because contemporary culture is largely dictated by the television entertainment industry, serious music has been invaded by the sounds of pop culture. (pp. xvi-xvii)

Ashworth Bartle (2003) concurs with Miller but makes some allowance for suitable, popular repertoire intended for children's chorus. Ashworth Bartle makes

reference to the commercial market, encouraging music educators to support the publication of fine repertoire:

> I have no problem with children's choirs occasionally singing a good arrangement of good tunes from musicals such as *The Sound of Music* and *Oliver*. I strongly object, however, when soloists and choirs belt out "Tomorrow" in a chest voice without any skills in vocal production. How many of us have auditioned children with raspy, broken speaking voices, only to be told, "I had the lead in *Annie* last week and we did fourteen performances"? We are not, I believe, in the entertainment business. We are trying to teach children aesthetics. . . . Children's choir directors must be fastidious with their selection of repertoire. You will do a great disservice to your choir if you give them music that inhibits their musical growth or undermines their musical integrity. It is what you buy and what you perform that dictate what most composers will write. Make sure you are buying music that is worthy of the children's musical development. (p. 187)

When considering North American children and their relationship to popular musics, it is natural to think of the Walt Disney multimedia corporation. Although an in-depth analysis of the music of Walt Disney films and features moves beyond the scope of this paper, it is necessary to consider Disney's powerful influence on the aural repertoire available for children.

Disney was the first producer to add a music and effects track to an animated film. The emergence of Walt Disney songs and musicals created the first popular music recorded and specifically designed for children. This recorded repertoire has become a kind of musical mother tongue whereby North American children potentially model their vocalizations.

Disney soundtracks throughout the twentieth century reveal remarkable transformations in musical style, vocal quality and sound ideal. This transformation will potentially influence the manner in which young children model their singing voices.

To provide clear evidence of this "sound" evolution, I have compared and analyzed the singing of significant Disney characters from the beginning and end of the

twentieth century. As children generally imitate and identify with treble voices (Green, 1987; Mizener, 1993), two female characters with lead roles selected from *Snow White and the Seven Dwarfs* (1937) and *Pocahontas* (1995). Two songs will be analyzed, "Someday my Prince will Come" and "Colors of the Wind", sung by Snow White and Pocahontas respectively.

Snow White and the Seven Dwarfs was immensely successful. The music of this production was the first recorded soundtrack commercially available as separate merchandise. This would pave the way for subsequent Disney films and future sales of millions of dollars worth of recordings to be distributed throughout North America and the rest of the world. *Snow White and the Seven Dwarfs* continues to generate revenue well into the twenty-first century.

The vocal range of "Someday" is wide, encompassing an interval of a 12^{th} between d1 and a2. The song is sung in G major. The voice of Snow White, originally sung by Adriana Caselotti, could be described as high, soft, trembling and light. "Someday my Prince Will Come" is accompanied by light, orchestral accompaniment. In 2002, the pop star Anastacia covered "Someday my Prince Will Come" for a Disney recording entitled *Disneymania*. Her remake of the 1937 classic maintains a semblance of the original tune set in a hip-hop/updated rhythm & blues/urban setting. The vocal range of the remake is dramatically lower with a narrow vocal range between f and d1.

Pocahontas was released in July, 1995. Judy Kahn and Vanessa Williams recorded the feature song, "Colors of the Wind." Like "Someday", the vocal range of "Colors" is also wide, encompassing an interval of an 11^{th} between a and d2 for Judy Kahn's recording. The song is sung in D major. The recording of Vanessa Williams, also

available on the original soundtrack, is sung in Bflat major with the range of an 11th resting between f and bflat1. "Colors" is accompanied by orchestra for the Judy Kahn version and by synthesizer for the Vanessa Williams version. The voice of Pocahontas on both recordings could be described as low, dark, warm and rich.

By comparing songs sung by these two bookend characters from 1937 to 2002, it is evident that these treble voice characters explore vastly different regions of the vocal range. The vocal range has lowered significantly and sound ideal has changed significantly. Disney has followed popular musical styles during the twentieth century. The influence of operetta is evident in the 1937 version of "Someday" while the recordings from the late twentieth and early twenty-first century reveal the strong influence of popular musics. This analysis suggests that children are also listening to popular vocal models singing in much lower ranges than in earlier parts of the twentieth century.

Summary

The history of child vocal pedagogy is relatively short, spanning only one hundred and fifty years. Two competing pedagogical approaches, the formal approach and song approach, have been used for children's vocal education throughout the twentieth century. The formal approach, consisting of prescribed vocal exercises and drills, became less popular in the mid- twentieth century until the 1980s. In the last decades of the twentieth century and now in the twenty-first century, both methods are used in combination providing the best approach for teaching children to sing.

Attitudes toward appropriate vocal ranges for children are varied. Lowell and Luther Mason and other early music educators in the public schools advocated lower,

comfortable vocal ranges for children learning to sing. Francis E. Howard challenged this philosophy, recommending that songs be set higher, between e1 and e2. Adherence to his philosophy lasted for decades. Based on physiological considerations as well as preferred sound ideal, these recommendations were thought to be healthy and good for children. Children were expected to conform to preconceived notions concerning vocal range.

Research stemming from the mid- twentieth century concluded that children sang more accurately in lower ranges; therefore, these studies recommended that children should begin to sing in a "natural," "comfortable," vocal range situated closer to the child's speaking voice.

Studies in the 1990s concluded that if children were taught to negotiate register shifts through a more formal approach—i.e., vocalises or other exercises—the vocal range of children would increase significantly and pitch matching would improve. At the same time, music educators in the late 1990s also embraced a more tolerant, vocally inclusive approach to children's vocal education.

Three pedagogical approaches written by Phillips, Thurman and Welch, Bennett and Bartholomew indicate that both the formal and song approaches are used today in child vocal pedagogy. Research-based, science-based and "human compatible" pedagogies provide a solid knowledge base for prospective teachers of children. The children's choir movement from the 1980s onward makes an immense contribution to the understanding of children's vocal development.

A survey of repertoire from public school graded music series, choral publications and children's popular music indicates that vocal ranges found in repertoire have lowered and widened over the past century. Research conducted in mid-twentieth century

concluded that there was a significant discrepancy between the comfortable range of children's voices and the music published for them. Music published in graded music series was found to be too high for the natural, comfortable range of the child voice. Choral music for children published during the twentieth century formed two streams of repertoire:

1. Repertoire for virtuoso children's chorus written with demanding part work and extremes of vocal range and
2. Repertoire for school choir influenced strongly by popular music with low vocal ranges.

Environment and vocal modeling play important roles influencing the way children sing. In general, popular musics that strongly influence children are based on singing. Analysis of children's popular vocal music provides clear evidence that its vocal range, like most of the graded music series, has dropped significantly during the twentieth century.

CHAPTER THREE

Socio-Cultural Perspectives

As seen in Chapters One and Two, perspectives on the physiological nature of the child singing voice, perceived vocal limitations and capabilities, appropriate ranges of children's song repertoire and pedagogical approaches are widely diverse, each subject area generating scholarly research, passionate opinion and controversy. Is the child voice fragile or resilient? Which register comprises the "natural" voice of children and, what exactly is the "true" voice of the child?

These questions prompted me to search not for immediate answers, but for reasons behind their existence. It became clear that debates concerning the proper handling and treatment of the child voice were closely connected to the way children are perceived in society. As the voice is invested with social meaning (Dunn & Jones, 1994), I began to consider the child singing voice as a product of culture; a social entity and sound image of children and childhood.

Chapter Three will study the social context of children and childhood, drawing parallels alongside notions connected with vocal pedagogy, sound ideal and the symbolic nature of the child voice. To make clear comparisons between the social nature of childhood and the child singing voice, it is necessary to first provide a brief summary of a number of social issues directly concerned with children and childhood. The following topics will be discussed, first in reference to children and childhood, then later applied to a social analysis of the child singing voice:

1. The sociology of childhood, with specific reference to the work of Phillipe Ariès (1962) and Lloyd DeMause (1974)

2. The history of childhood, focusing on the state of children and childhood within contemporary society through the theories of Postman (1994), Meyerowitz (1985), and Buckingham (2000)
3. Symbolic and representational concepts of children and childhood
4. Adult control and child plasticity

James (1993) contends that sociocultural studies of this nature concerning children are needed: "Although the childhood which children experience is regarded as central to any discussion of the reproduction of cultural knowledge, how children receive and make use of that knowledge remains relatively uncharted" (p. 82). Sharpe (1993) also acknowledges that "there is surprisingly little written about the nature of childhood in relation to music" (p. vii).

In addition to discussing the way children sing in relation to the social construct of childhood, Chapter Three will examine the meanings, representations and symbols attached to the *sound* of music emanating from the child's body. Because the aural/oral image of children using upper register voice production, or head tone, has been clearly and firmly entrenched in the Western musical canon this chapter will study the social subtext underlying head tone as well as that evoked with the chest voice or belt voice.

Leppert (1993) clearly explains the connection between sound and social environment:

> The phrase "sonoric landscapes" embeds the following observations and assumptions . . . :
>
> 1. that sounds surround us, helping to construct us as human subjects and to locate us in particular social and cultural environments
> 2. that sounds produced or manipulated by humans result from conscious acts and hence carry a semantic and discursive charge
> 3. that all sounds—even those not produced by humans or "merely" heard by them—can be read or interpreted; and

4. drawn from the preceding three, that sounds are a means by which people account for their versions of reality: as it was, is, and/or might be. (p. 15).

As discussed in Chapter Two, adults expect to hear specific singing sounds from children. Precise pedagogical approaches and methodologies developed through the past one hundred and fifty years cultivate, encourage, develop and preserve these sounds. These singing sounds could potentially be considered the "sonoric landscape" of a child.

Just as Dyer (1997) considers visual images within media technology as "a way of seeing the world that serves particular social interests" (p. 83), Chapter Three will also discuss the social interests behind adult control as connected to children singing utilizing upper register vocal production. Often connected with the image and sound representation of innocence and purity (Stultz, 1999), head tone acts as a powerful cultural symbol connected to social constructs of class, religion, ethnicity and age.

Just as "books written for children, perhaps more than any class of literature reveal a society's values and contradictions" (McNall, 1985, p. 378) so do the musical materials designed to develop the child voice. The final section of Chapter Three will identify the subtexts within the current pedagogical canon.

Definitions

For the purposes of Chapter Three, "child" and "children" will be defined as those individuals beyond infancy who have fully developed speech patterns (approximately age 5) until voice mutation (between ages 11-13). These terms should not be confused with the social construct of "childhood".

The children and childhoods referred to in this chapter will be "anglocentric." Postman (1994) observes: "Where literacy was valued highly and persistently, there were schools, and where there were schools, the concept of childhood developed rapidly. That

is why childhood emerged sooner and in sharper outline in the British Isles than anywhere else" (p. 39). In addition:

1. Britain was home to the "golden age" of childhood;
2. British choral tradition has long served as a vocal ideal for children's choral singing;
3. Educational practices in Britain have strongly influenced children's vocal pedagogy in North America.

Finally, "enculturation" is defined by Shehan Campbell (2002) as "the life-long process by which people develop their personal and collective cultural identity" (p. 65) and, with specific reference to music, by Green (2002) as "the acquisition of skills and knowledge by immersion in the everyday music and musical practices of one's social context" (p. 22). By combining these two definitions, musical behaviours (including singing) are shaped from both personal and collective experiences within society.

The Sociology of Childhood

The concepts of "children" and "childhood" became worthy areas of academic discourse during the last decades of the twentieth century into the first decades of the twenty-first. James (1993) observes that: "the childhood characteristic of modern Western societies is an historically specific institutional form. It is just one among many possible ways of seeing and classifying children" (p. 72). When considered within a particular social context or social reference point, sociologists agree that all societies have a concept of childhood, but what differs is the conception.

"Childhood" has long been accepted as a period of fragility, vulnerability, innocence, incompleteness, a time of development and socialization or even a shifting set of ideas (Cunningham, 1995). Viewed in this light, "children" have often been described

in similar terms, and considered to be passive members of society, incomplete, dependent, homogenous, asexual beings in the process of reaching the fully developed, complete world of adulthood. Prior to 1960, children were examined from physiological, psychological, behavioural and developmental perspectives but not examined in the light of a social or cultural context. Children were a "muted" group akin to women and other minority ethnic groups (James & Prout, 1997).

Phillipe Ariès

The groundbreaking work of Ariès (1962) created fertile ground for the study of childhood. Through his interpretations of representations of children as seen in artworks throughout the history of Western visual art, he came to the conclusion that childhood did not exist in the medieval world, but that medieval children were merely considered little adults. Childhood, itself, was a construct that gradually evolved in European society between the 15th and 19th centuries. For Ariès, childhood is not timeless but an ever-changing, shifting societal concept and the history of childhood can in essence be considered a history of change.

Lloyd DeMause

Another important concept of childhood which builds on the work of Ariès was that of DeMause (1974). DeMause agrees with the principal thesis of Ariès, adding his own psychogenic theory: that the care and concern for children has steadily increased so that at no other point in history have children been treated so well as they are in present-day society.

In the last decades of the twentieth century, children were no longer considered passive receptacles, but active agents in their particular time of life. In an extension of DeMause's philosophy, sociologists such as Lillehammer (2002) look at an active world

of children. The traditional *concept of childhood* (which is passively and temporally constructed) is transformed into the *concept of the world of children* (which includes a spatial dimension of activity). Sociologists now look for the figurative voices of children, attributing them with agency and participation and challenge notions that children are a passive group within a larger societal context.

The History of Childhood

Because of a high mortality rate and short life span, there seems to have been relatively little difference between adults and children in early societies; however, in the era of Augustine (circa 400 AD) vigorous debates erupted concerning the moral nature of children. According to Sommerville (1990) "Christianity directed increased attention to childhood. For the first time in history it seemed important to decide what the moral status of children was. . . . The Christian era marks a revolution in the child's status" (p. 61). Children were thought to possess original sin in need of baptism; however, in the twelfth century, the Church began to use the image of the child as a symbol of tenderness, peace, humility, innocence and virtue.

From viewing the representations of children in art, Ariès concluded that the medieval child was simply considered a miniature adult. The medieval child was dressed like an adult and appeared to take part in depictions of adult activity. Ariès surmised that children in the medieval period were mixed with adults as soon as they could be independent of their nannies. In the medieval period, childhood ended at the age seven. At the age of seven, with full command of speech, a child could fully participate in an oral culture.

During the Renaissance, children held esteemed positions that were more distinct from adulthood. Children were considered to hold the key to the future. Childlike cherubs

found in the art of renaissance Europe represented love. Sommerville (1993) writes that "Raphael gave them [children] a theological significance, scattering them through the heavens to represent God's love, the great impulse behind all creation" (p. 93).

In the seventeenth century, the Puritan idea of the child was based primarily on Augustinian doctrines of original sin. The weakness and innocence of children was recognized. The child was considered to be a naturally sinful being. Children were thought to carry original sin and to be in need of cleansing. In order to combat original sin, the Puritans became interested in education and recommended children be separated from the adult world. This laid a part of the foundation for the formation of the family, a social construct that would strongly influence the Western world in the nineteenth and twentieth centuries.

The teachings of Locke in the seventeenth century and Rousseau in the eighteenth century established rather conflicted concepts of children in the nineteenth century that have persisted to the present day. Locke considered children to be in need of control and cultivation. He asserted that they possessed no innate potential but were blank slates in need of discipline and education. In contrast, Rousseau was an optimist, believing in the natural goodness of children. Education was a process of discovery that was completely contained within, and drawn from, the child life and experience.

Children's literature was a vehicle for religious education and social reform, playing an important role in the establishment of discipline and control. O'Malley (2003) writes:

> The late eighteenth-century recognition of childhood as a precarious state requiring rigorous rational and moral training, and constant supervision and discipline, speaks to the anxieties and pressures of an emerging middle class struggling to forge its identity in a time of social and political change and uncertainty. (p. 135).

The concept of the "modern" child was formed during the nineteenth century, and the "golden age of childhood" was created in reaction to the harsh working conditions and other atrocities committed against children during the industrial revolution.

Removing children from the workforce in the nineteenth century coincided with the emancipation of slaves in British colonies. Labour laws were reformed in response to the contradiction of releasing the black slaves in the colonies, yet maintaining the white slaves (children) at home. Postman (1994) observes that children emerged as "a new class of people. They were people who spoke differently from adults, who spent their days differently, dressed differently, learned differently, and, in the end, thought differently" (p. 45).

In keeping with the ideas of Rousseau, the modern child was considered to be pure and innocent, possessing deep wisdom and aesthetic sensibility. The Romantic notion defined childhood as timelessness and changeless. Childhood was revered, nearly placed on religious ground. In the romantic spirit, children were directly connected to the hands of God. They were the embodiment of hope. Childhood was therefore considered to be a garden, an Arcadia or Paradise. Cunningham (1995) writes of the connection between the industrial revolution and the construction of childhood:

> The more adults and adult society seemed bleak, urbanized and alienated, the more childhood came to be seen as properly a garden, enclosing within the safety of its walls a way of life which was in touch with nature and which preserved the rude virtues of earlier periods of history of mankind (p. 3).

Nonetheless, the Romantics could not ignore the seventeenth century undercurrents that children possessed original sin. If left to themselves without some kind of civilizing influence or cultivation, children would naturally assume the position of a savage. Jenks (1982) explains Victorian tendencies to compare children with the savages discovered in the colonies:

> Just as the savage serves as the anthropologist's referent for man's elementary forms of organization and primitive classifications, giving a sense of the primal state of human being in the historical-cultural process, so also the child is taken to display to adults their state of once untutored difference, but in a more collapsed form: a spectrum reduced from 'human history' to one of generations. (p. 11)

The commercialization of childhood began in the nineteenth century industrial age when the production of material goods was increasing at a remarkable rate. The toy industry began to flourish. The recognition of childhood as a special, revered time was marked by the large quantity of materials designed, manufactured and sold with children in mind as consumers.

The nineteenth century was also considered to be the golden age of children's literature. The first publications of Newbery appeared in the late 18th century. Nineteenth century children's literature departed from the predominantly moralizing tones found in literature written in the seventeenth and eighteenth centuries. Kline (1993) identifies the year 1855 as the line between old literature (moralizing) and new literature for children. The new literature was no longer considered "soul saving didacticism" (p. 94); it was written to entertain. According to O'Malley (2003) the children's literature of the Victorian era reflected notions of childhood "as a period of wonder, playful nonsense, and uninhibited imagination" (p. 135).

With the introduction of compulsory education, determined efforts were made to provide a homogenous childhood for all. Within this system, children were taught to learn not only concept and skill development but also to conform to societal norms. Sommerville (1990) states that "efforts were made to provide such a childhood for everyone, even if it meant squeezing some of them into the mould. By the turn of the century the major institutions designed to help in this effort had been firmly established" (p. 223).

Cunningham (1995) explains the larger social necessity for compulsory education:

> Compulsory schooling was not introduced simply or mainly to try to provide all children with an experience of childhood. It has to be understood in a context of state rivalry, and a worry about the effectiveness of the socialization of children in the reproduction of the social order. (p. 159)

Focus on the child and learning led to further developments in pedagogy and methodology. Within the formalized educational system, attempts were made to standardize childhood. Hawes and Hiner (1985) criticize the nineteenth century mass education movement, stating that: "under the influence of the modern idea of childhood, adults began to deprive children of their freedom, confine them to prison-like schools, and subject them to the severe discipline of schoolmasters" (p. 3). Sommerville (1990) is even more critical of the compulsory education movement:

> A general State education is a mere contrivance for moulding people to be exactly like one another: and as the mould in which it casts them is that which pleases the predominant power in the government, whether this be a monarch, a priesthood, an aristocracy, or the majority of the existing generation in proportion as it is efficient and successful, it establishes a despotism over the body. (p. 228)

Cunningham (1995) sees the mass education movement as one of the most significant developments in the history of children and childhood:

> There is . . . also little doubt that the introduction of compulsory schooling, normally in the late nineteenth century, did more than any other factor in these five centuries to transform the experience of and the meanings attached to childhood by removing children, in principle if not immediately in fact, from the labour market, now reserved for those who were no longer 'children'. It was this which eventually brought about in the twentieth century an emotional valuation of children much greater than anything accorded to them in previous centuries. (p. 17)

With a late-twentieth century lens, James (1993) summarizes the emerging concept of childhood from the seventeenth century to the nineteenth century:

> It becomes possible to see how, in successive intellectual generations, the child's 'nature' has become essentialised as a critical aspect of childhood. Differently

> delineated over time, the debate as to what this might consist of has encompassed a wide diversity of opinion. From the Puritan emphasis upon original sin, through Rousseau's depiction of the child's inherent innocence, to Locke's *tabula rasa*, there runs a complex stream of ideas about what children are like and what childhood is. Accompanying each new, philosophical construction of childhood were changes in society's more prosaic and everyday dealings with children as, in the home, the classroom or the street, new social, educational and reformatory regimes were introduced to curb, control and order the activities of children. By the late nineteenth and early twentieth centuries these changing attitudinal tides had culminated in both conceptual, and literal, marginalization of children from adult social spaces. Ironically depicted in terms of an increasing child-centredness, through its concern for child-protection and saving, this social marginalization was effected through particular child-rearing practices and particular institutional settings in response to particular ideas about child psychology and development. (p. 72)

The twentieth century is considered the "century of the child" (Cunningham, 1995, p. 18). The child moved from a nineteenth century position of working to contribute and support the financial security of the family to a twentieth century position whereby parents work to support the needs and wants of the child; however, in the twentieth century, children also played an extremely active role in the economy as consumers.

Knowledge about childhood physiology and cognitive development increased adult control dramatically in the mid-nineteenth century. By the early twentieth century, scientific inquiry focused on the nature of children established physiological and cognitive standards. As a result of health, education and welfare programs created for children, the child of the twentieth century has also shown physical evidence of change. Children in developed countries are stronger and healthier than they ever have been due to the creation of pediatric medicine and research. Although the evidence is not conclusive, it is thought by many sources in the medical community that children in the late twentieth century are maturing earlier (Postman, 1994, p. 12; Lee, Guo, & Kulin, 2001; Qaadri, 2002). In addition, during the twentieth century, changes in evolutionary

theories and psychology led to other understandings about children, essentially demythologizing of children and childhood. Adhering to the Romantic vision of children and childhood was no longer possible. Sommerville (1990) writes: "Darwin and Freud have worn us down. Whatever we think of their theories in detail, it is no longer possible to view children as angelic beings" (p. 255).

The late twentieth century heralded international recognition of children through the adoption of the 1989 United Nations charter concerning universal rights for the child. During the course of the twentieth century, children became primary objects of control, concern, care and protection. James (1993) observes:

> Although not bound by biography the cultural world of Western childhood is . . . more literally 'edgy'. The time of childhood exerts a strong constraint on children's activities, buttressing a set of legal, physical, and social boundaries which separate children off from the adult world. This makes of childhood a conceptually marginal domain. Within it children's bodies become confined in designated safe, but peripheral, spaces; schools, playgroups, playgrounds, gardens, parks, car seats, high chairs, playpens, paddling pools. Ideally their social contracts and access to knowledge are similarly restricted: to teachers and school class-mates, family and close friends, to children's TV, children's games, children's books, children's lessons, children's films. (p. 107)

Specific sets of boundaries, limitations and expectations were designed for the child in the late nineteenth century to the twentieth. Jenks (1982) notes that: "the child status has its boundaries maintained through the crystallization of conventions into institutional forms like families, nurseries, clinics and schools, all agencies specifically designed to process the status as a uniform entity" (p. 11).

Just as children have been considered in relation to cultural influences such as religion and the industrial revolution in the seventeenth, eighteenth and nineteenth centuries, the ubiquitous presence of the electronic media has made a significant impact on the lives of children in the twentieth and twenty-first centuries. For some scholars, the relationship is a negative one—the media are seen to be assaulting children and

childhood (Meyerowitz, 1985; Postman, 1994; Lee, 2001). For others, the relationship is viewed as positive, contributing to childhood opportunities and abilities. Buckingham (2000) labels these contrasting perspectives as the *death of childhood* (pessimist) and the *communications revolution* (optimist) perspectives.

The Death of Childhood

The "death of childhood" theory is based on the notion that the creation of print media (which separated adults from children) was responsible for the creation of our contemporary conception of childhood and that electronic media (namely television) in the twentieth century are "disappearing" it (Postman, 1994). Postman considers the three conditions of literacy, education and shame as necessary for the existence of childhood. Postman contends that the disappearance of childhood is caused by attacks on literacy (culture is increasingly visualized); school (no education is needed to understand pictures); and shame (television has no regard for decency or secrets).

Spawned partially by religious motives, the creation of the printing press in 15th century Germany was integral in communicating in the vernacular to the general public in addition to disseminating ideas of religious conformity. Reforms in the education system were necessary in order for the general public to gain access to this information. There were distinct boundaries between those who were literate and those who were not. The mass education movement began. Standard, sequential processes were created in order to access the ideas and information that printed material presented. Within the education system, children had only access to ideas and materials that they could read and understand. Adults had the power and ability to shield and protect children from any information that was, in the eyes of adults, harmful, and therefore deemed inappropriate.

For Postman, childhood was firmly established by 1850 and reached its zenith in 1950 before television was firmly implanted in the family home.

According to Postman and Meyerowitz (1985) the appearance of electronic media removes the barrier between what is *adult* and what is *child.* Whether information is disseminated via radio, television, film, sound recording or other electronic means, adults and children have equal access to it. On a basic level, formal education is not necessary simply to listen or to watch. In addition, the electronic age created an environment where a plethora of information is widely available in an unprecedented quantity and can be accessed in a domestic environment by both adults and children, simply at the flip of a switch or a click of a button. This lack of separation blurs another boundary between adult and child. Postman writes:

> In a literate world children must *become* adults. But in a nonliterate world there is no need to distinguish sharply between the child and the adult, for there are few secrets, and the culture does not need to provide training in how to understand itself. (p. 13)

Meyerowitz (1985) contends that ready access to information communication technologies in the twentieth and twenty-first centuries enables children to conquer adult modes of behaviour; conversely, through shared technology, adults are essentially becoming overgrown children. Children are no longer prohibited from adult social spaces and parental authority has declined. This perspective is aligned with that of Ariès: society is returning to the state of medieval times when the boundary between what was child and what was adult was not clearly differentiated.

Buckingham (2000) describes this phenomenon in terms of television programming:

> Thus, the age at which childhood *ends*—at least as far as the media industries are concerned—seems to be steadily reducing. Children's television producers, for example, now acknowledge that the bulk of older children's viewing is given over

> to 'adult' programmes, and the content and style of programmes aimed at them clearly reflect this. . . . While some critics have always complained about the precocity of children's programmes, others are now beginning to bemoan what they see as the infantilization of 'adult' television (p. 99).

Cunningham (1995) concludes that the twentieth century has seen an extremely rapid, unprecedented change in the conceptualization and experience of childhood. He states that:

> the vision of the century of the child has faded. It is not that people have ceased to accord significance to childhood—far from it; rather, they have begun to doubt that it is possible to preserve in any integrity the territory mapped out as childhood. Invasions threaten from every quarter, and childhood, so it is argued can no longer survive. (p. 179)

Lee (2001) concurs with the ideas of Postman and Meyerowitz. "Adulthood can no longer be assumed to be stable and complete. Childhoods are becoming increasingly ambiguous" (p. 103). Lee draws an interesting connection between the disappearance of childhood and globalization. In the nineteenth and early twentieth centuries, boundaries between nations were much more defined. Seen as investments for the future, children were protected from foreign influence and educated accordingly. In the late twentieth century and twenty-first, countries are increasingly more dependent upon one another economically. Children are no longer looked upon as property of the state or as an investment in the future survival of the state. Children are now recognized as global citizens.

Lee (2001) adheres to the death of childhood perspective, but from the point of view of adulthood:

> Though the sense that adults have greater experience than their children has not disappeared (far from it) it is less likely today, especially in the industrial west, to translate directly into parents' ability to command children's obedience. . . . Children as much as parents may become actively involved in shaping their families through negotiation and participation in decision-making. . . . As adulthood is led into flexibility by socio-economic and cultural change across the

> globe, it is clear that stable, complete, standard adulthood can no longer be presumed to exist. (p. 19)

Communications Revolution

With roots in the eighteenth century philosophy of Rousseau, the optimist perspective claims that children are naturally media savvy. As a result, they are empowered by new media technologies. Children are seen as active participants, benefiting from and enabled by their use of the media. This perspective recognizes the technology generation gap between adults and children. Children have access to new forms of culture and communications that parents are finding not only increasingly challenging to monitor, but difficult to understand. The new technology takes children beyond the restricted imaginations of their parents and teachers. Buckingham (2000) summarizes:

> Far from being passive victims of the media, children are seen here to possess a powerful form of 'media literacy', a spontaneous natural wisdom that is somehow denied to adults. In particular, new media technologies are seen to provide children with new opportunities for creativity, for community and self-fulfillment. While some have voiced concern about this growing generation gap in media use, others have celebrated these new media as a means of 'empowerment' or even 'liberation' for children. Far from urging adults to reassert their authority over the young, advocates of this view typically call on adults to 'listen to'—and 'catch up with'—their children. (p. 41)

Symbolic and Representational Concepts of Children and Childhood

From the preceding survey of the history of childhood, it is evident that the history is based on adult perspectives; childhood is primarily constructed on adult notions and interpretations of what a child is and how s/he is influenced by the material world. Images constructed by adults can perpetuate assumptions about children. James (1993) states:

> Images of childhood, evoked through visual and verbal representations of children, commonly pepper the news and entertainment media of Western societies. These provide a particular way of seeing children and are illustrative of

> the cultural lens through which childhood in these contexts is ideally understood as a reassuring familiarity. . . . Such images, through their positive affirmation or negative and emotive denial, offer a visual account of what childhood should be like in a contemporary Western society. . . . Thus it is that through verbal accounts and visual representations of many individual children, one dominating model of childhood emerges and is daily construed for the adult and child viewer. (p. 66)

Steedman (1995) notes that "the claims for a history of adult attitudes towards children, and of upsurges of interest in children and the notions of childhood they embody, are much more compelling than the claims for a history of children" (p. 6).

Buckingham (2000) writes of the role that adults play in the presentation of these images. He holds that these representations:

> are not only embodiments of *ideas* about childhood, but also a vehicle for adults' ambivalent *feelings* about children—feelings of fear, anxiety, pity, nostalgia, pleasure and desire. As such, they tell us much more about adults than they do about children. (p. 35).

Western representations of children in society are unstable as they traditionally portray children as the future generation or the embodiment of a nostalgic, romanticized past. During the three hundred years in which childhood has been constructed, the appearance and representation of children in literature, visual art, film and music reflect particular adult attitudes about what a child should be. Ariès (1962) used the images of children in art to create an understanding of the history of childhood. Routley (1966) traces the evolutionary representation of children and the concept of childhood as seen in the work of eighteenth, nineteenth and twentieth century writers:

> There is a profound difference between wanting to let children be children and wanting to keep them children. The eighteenth-century writers did not care for children as children, being too anxious for them to grow up. The nineteenth-century writers tended to shelter them in a religious enclave, an enclave as jolly and exciting, to be sure, as a tent in the backyard, but still one in which they must remain for as long as they can be persuaded to stay. The twentieth-century writers have made some effort to treat children as children: but the danger is that they will even more than the nineteenth-century writers romanticize childhood and let

> the children think that nothing lies beyond what they can assimilate at the age of thirteen. (p. 449)

Photographic representations of children throughout the twentieth century have contributed to specific interpretations of childhood, creating both reality and illusion. Holland (1992) illuminates the power of the photographic image:

> A picture can pull a moment out from the passage of time and hold it static for our delight. It can offer us visions of places we have never visited, people we will never meet, experiences we have only dreamt of, fantasies the more powerful for their seeming reality. . . . Pictures, then, seem to clarify experience and enhance the value of our lives. They offer material for constructing and reconstructing our own lives and making judgements on those of others. (p.11)

Derevenski (2002) writes:

> Children have often been sentimentalized. . . . In researching the material imagery of the life course in photographic libraries and archives, I found searches under the heading 'children' overwhelmingly yielded images of smiling children playing with dolls, blocks or other toys, children in parks or naturalistic settings, children with pets, naked children, gurgling babies or humorous pictures of children posed growing in flowerpots or on the toilet. The classification of these pictures clearly draws on conceptualizations of the child as happy, innocent, natural, immature, uninhibited, amusing and sweet. Less pleasant images of children were often classified according to the country in which the photograph was taken. Thus, while a child may be the primary subject of a photograph, if the picture lacks 'cute factor' the child is reduced to an ethnographic curiousity. (pp. 4-5)

Holland (1992) questions the authority of those responsible for the portrayal of children through these photographic representations: "Who claims the right to produce these images, who constructs their meanings, what sort of claim do they make to authenticity and truth, and what is the importance of a challenge to that claim?" (p. 8)

Adult Control and Child Plasticity

Through adult representations of children it is evident that adults exert control over the identities of childhood. This control gradually increased as the concept of modern childhood developed throughout the seventeenth to nineteenth centuries. Postman states:

> What had happened—the underlying structural change—was that through print and its handmaiden, the school, adults found themselves with unprecedented control over the symbolic environment of the young, and were therefore able and required to set forth the conditions by which a child was to become an adult. (p. 45)

James (1993) writes:

> In Western societies, the particular form which this culture [childhood] takes is, however effectively, shaped by adults' wants and desires: we want our children to learn, so we send them to school; we want them to be sociable, so we encourage them to make friends, to play games; we desire them to be protected, so we curtail their activities within a known environment and endeavour to restrict their access to certain types of knowledge. (p. 94)

In effect, adults disempower children and continue to define them in exclusionist terms, determining what children are and what their childhoods should consist of.

According to Buckingham (2000):

> adult definitions of childhood are thus simultaneously repressive *and* productive. They are designed both to protect and control children—that is, to keep them confined to social arenas and forms of behaviour which will not prove threatening to adults, or in which adults will (it is imagined) be unable to threaten *them*. Yet they are seeking not just to prevent certain kinds of behaviour, but also to teach and encourage others. They actively produce particular forms of subjectivity in children, just as they attempt to repress others. . . . Adults have always monopolized the power to define childhood. They have laid down the criteria by which children are to be compared and judged. They have defined the kinds of behaviour which are appropriate or suitable for children at different ages. Even where they have purported merely to describe children, or to speak on their behalf, adults have unavoidably established normative definitions of what *counts* as child-like. (p. 12)

Within the realm of visual images, Holland (1992) also writes of adult control over children, childhood and an effort by adults to preserve memories of what childhood used to be:

> The image world displays and circulates countless pictures of children in everyday routine usage. Making sense of them is part of a continuous adult effort to gain control over childhood and its implications—both over actual children and over a personal childhood which we are constantly mourning and constantly reinventing. (p. 12)

Derevenski (2000) provides a perfect summary of stereotypical attitudes and representations of the child and the time of childhood:

> Western childhood has become a period in the life course characterized by social dependency, asexuality and the obligation to be happy, with children having the right to protection and training but not to social or personal autonomy. The corollary to this is that power relations are weighted in favour of adults. Being a child is to have a particular place in the social order. To step outside those relational boundaries and be a child outside adult supervision is to be out of place. (p. 5)

Alongside adult power and control over children and childhood, children possess the ability to be remarkably flexible, naturally conforming to adult expectations. In James's (1993) academic study of children's identities, the term "plasticity" is used to describe the ease in which children modify their behaviour within their relationships with adults as well as within their own social milieu. Children have the capacity to adapt socially in any manner adults or other children wish them to. This polymorphous ability allows children to fit into the dominant culture. Heywood (2001) writes: "Any idea of a purely "natural" child becomes difficult to sustain once it is realized that children readily adapt to their own particular environment, the product of assorted historical, geographical, economic and cultural forces" (p. 9). Heywood's statement is of considerable importance to the section which follows concerning the basic nature of the child voice.

Through consideration of sociological, historical and representational issues in relation to children and childhood, it is apparent that many conflicting notions of childhood exist, often comprised of contradictory stereotypes. Based on centuries old binary logic of "good versus evil" (Saunders, 2003, p. F3), children are portrayed as depraved or innocent; natural or in need of nurturing; independent or dependent. In the twenty-first century many questions arise concerning children and childhood: Is there

more than one way of being a child and more than one childhood? Is each way as valid as the other? What is adult and what is child? What is considered to be authentic childhood behaviour or authentic childhood?

Although not providing an answer to these questions, Cunningham (1995) provides an excellent explanation:

> The peculiarity of the late twentieth century, and the root cause of much present confusion and angst about childhood, is that a public discourse which argues that children are persons with rights to a degree of autonomy is at odds with the remnants of the romantic view that the right of a child is to be a child. The implication of the first is a fusing of the worlds of adult and child, and of the second the maintenance of separation. (pp. 189-190)

Sociological Perspectives on the Child Singing Voice

Adult conceptions of children and childhood throughout history are rife with contradictions, complexities and multiplicity. In the late twentieth century and early twenty-first, the question concerning the validity of versions of childhood can be applied to a child's singing voice. What is the true singing voice of a child and, if there is one, who has the power to define it? Is there one singing voice that is more valid than the other? Is there an authentic voice of a child or is the child voice simply a product of enculturation and experience? Up to the 1990s, many music educators would have had extremely clear, straightforward answers to these questions; however, by considering the physiological, pedagogical and repertorial perspectives discussed in previous chapters, it is evident that clear answers no longer exist.

By analyzing the child voice in a social context, I will argue that there is no such thing as a "true", "natural" or "authentic" singing voice of a child, as a child's singing rests primarily on the desires and motivations of adults. The child voice is therefore as much a social construct as childhood itself.

When reviewing the rather meager body of literature concerning the child singing voice within a social context, it is evident that the area is relatively uncharted. Small (1977) studied music education in a social context, outlining parallels between Western music, Western education, and the nature of Western society with special emphasis placed on the role of the child as consumer in the educational realm. Sharpe (1993) investigated the representation of children and childhood in Western classical compositions. Dunn and Jones (1994) researched the vocality of women. Potter (1998) examined a variety of singing styles and genres within a social context from an adult perspective. Woodford (1999) discusses "vocal fundamentalism" through the hegemony of Western classical vocal pedagogy within the private vocal studio and choral music education. Welch (2000a; 2000b; 2001; 2004) discusses the developmental continuum of the child voice within the context of enculturation.

Phillipe Ariès

The two principal tenets of Ariès—that the concept of childhood did not exist before the fifteenth century and that childhood is neither timeless nor unchanging—can easily be applied to the singing voice of the child. Before the seventeenth and eighteenth centuries, there was very little written about the manner in which children sang. Following the Reformation, more pedagogical materials were available for hymn and psalm singing. These pre- nineteenth century manuals were designed for children and adults alike; singing tutors designed specifically for children gradually emerged in the nineteenth century.

In reference to the shifting nature of childhood, it can be seen through the examination of the child voice from a physiological perspective in Chapter One, and a pedagogical perspective in Chapter Two, that the desired tone quality produced by the

child voice is also shifting over time. Physiologically, the body of the Western child has changed significantly; children in the early twenty-first century are found to be stronger and healthier than at any other time in history. Pedagogically, the past one hundred and fifty years of vocal pedagogy for children has shown diverse opinions concerning comfortable, natural or appropriate vocal ranges as well as discordant notions regarding the training and exploration of upper and lower registers. The late twentieth century and early twenty-first century show a greater tolerance for the exploration and use of the lower register in the singing of children as opposed to the pure head voice training of the late nineteenth century.

Lloyd DeMause

The psychogenic theory of DeMause (1974) assumes that with each succeeding generation, the relationship between parents and children improves. The parent/child relationship runs parallel with the music educator/student relationship. In the late twentieth century and early twenty-first, advances in technology have made it possible for conductors or teachers of singing to have a better understanding of the voice. Vocal pedagogy and educational methods have improved and there is more information and repertoire available for educators. Children, therefore, have the potential to be better educated. In combination with improved health and strength, children in the twenty-first century should be singing better than they ever have before.

The History of Childhood and the Child Singing Voice

There is very little written about the quality of singing (either child or adult) during the medieval period or before; it could be assumed that sound quality and a specific manner in which children should sing was not considered an important matter. Potter (1998) discusses the medieval concept of singing:

> There is little reference to the sound of singing, suggesting a basic singing style so universal that no comments on it are to be found. The many commentators who accompanied the crusading armies apparently did not notice anything very different from what they heard at home. There was, as yet, no concept of a stylized way of singing comparable to that which today characterizes cathedral choristers (both children and adults). Singing seems to have been praised for its naturalness, as a means of illuminating meanings, rather than a sound as an end in itself. (p. 23)

In the seventeenth and eighteenth centuries, the notions of Locke and the Puritans and the belief that children carried original sin affected not only children's literature, but music intended for children as well. Adults and children shared much of the moralizing music available in hymnbooks and psalters published in continental Europe, the British Isles and early America. The texts of these hymns and songs were intended to cultivate discipline as well as encourage good behaviour. The influence of these publications was evident well into the nineteenth century as can be seen through the songbooks and instruction manuals. Mason (1840) provides a quintessential example of a didactic, moralistic song text:

The Good Scholar

I love to be hearing and learning of truth,
I treasure the fast-flying moments of youth;
Just come from our teacher, from doing our best,
More merrily play we, more happily rest.

O then with what rapture we play-fellows meet,
The taste of enjoyment seems never so sweet;
Then shine with new beauty the garden, the field,
Then smiles the fair earth in her glory revealed.

O joy with the glad ones the gladdest to be;
While teachers and friends all approve of our glee!
I'll hie me to school then, and there do my best,
And then for my share of good sport with the rest.

(Mason, 1840, p. 51).

A parallel can also be drawn between the nineteenth century appearance of materials created especially for children in the form of literature and toys and children's singing. As children's bodies were looked upon as small, fragile and weak, it was assumed that they would be given miniature objects to play with. In relation to the singing voice, they were therefore expected to sing with a softer, smaller voice.

It is evident from the writings and recommendations of nineteenth and early twentieth century music educators that the concept of the homogeneity or standardization of childhood within the educational system was applied to homogeneity of children's voices as well: "The voices of boys and girls, prior to the age of puberty, are alike" (Howard, 1898, p. 19). Howard gives advice as to how to establish homogeneity of tone through upper register vocal production within a group setting:

> Finally, as an excellent test to settle if the tone is soft enough to ensure the use of the thin register beyond doubt, require the class to sing so that no particular voice can be distinguished from others, which will make the tone as that of one voice, and perhaps lead you to doubt if all are singing, until convinced by the movement of their mouths. The tone will seem pretty light and thin, but will be sweet as the trill of a bird. (p. 54)

Without doubt, this approach reflected the notion that children were all alike, sweet and soft. Children were essentially moulded to sound like children.

From a social perspective, a child was thought to be in need of protection and often not allowed to participate in particular forms of activity or be privy to specific, adult knowledge. As applied to singing, until the mid-twentieth century, nearly exclusive training of soft, upper register singing was advocated. Use of the lower register was considered to be beyond the boundaries of vocal safety, dangerous, adult or sensual.

The semantics connected with the two vocal registers are based on nineteenth century romantic notions presented by Blake and Wordsworth, speaking of innocence (upper register) and experience (lower register). These registers are essentially connected

to images of what is child (upper register; innocence) and images of what is adult (lower register; experience). As discussed in Chapter Two, compositions written for children's voices in the early twentieth century reflected this philosophy, respecting the boundaries and limitations of a vocal range between e1 and e2.

The stereotypical world of childhood was strictly held in place by the choice of poetry and texts of children's song repertoire in the early twentieth century. As seen by song titles such as "A Child's Grace" (Gibbs, 1924); or from songs within song collections such as *Candlelight: A Set of Nursery Jingles* (Warlock, 1924); *Wumblements* or *Chiddlewinks* (Rowley, 1925; 1932); or *Friday Afternoons* (Britten, 1936), themes concerning playfulness, nature or animals and texts speculating what a child would like to be when s/he grew, accurately reflect the romantic view of childhood as a separate time of innocence, sweetness, innocence, goodness and hope in the future. The first verse of Vaughan Williams's "The Singers" (1930) preserves social order at the same time as extolling the carefree, happy nature displayed by children's singing:

The Singers

Tom will be a carpenter, John will go to sea,
Elizabeth will learn to cook, But what shall we be?

Sue will be a dressmaker, Sam will drive a bus.
Harriet will keep a shop, but what of all us?

Elizabeth, Tom, Harriett, John and Sam and Sue.
Though you have a trade in store, Oh won't you sing, too?

Oh we will sing high and we will sing low,
And nothing on earth shall prevent us
A fig for your industry off you may go
It's singing alone shall content us!

This repertoire adhered to recommended vocal boundaries and limitations for children from the time, but beyond this, the song texts reinforced how children were made to sound like children.

In regard to nineteenth century vocal pedagogy, "the new and dynamic middle class appropriated 'classical' singing, which became an institutionalized style legitimized by scienced myth and a morality expressed through discipline" (Potter, 1998, p. 199). Rutkowski (1985) observes how singing played an important disciplinary role within the Child Study Movement (1880-1914):

> This movement, acknowledging that children were not little adults and consequently could not be expected to learn as adults, was initiated in 1879 by G. Stanley Hall. Emphasis was placed on feelings, reflecting Hall's contention that music provided a vehicle for this expression. He also indicated music's contribution to the moral and patriotic aspects of education. (p. 3)

During the nineteenth century, music education, particularly choral music education, was an ideal medium through which to socialize not only the working class, but children as well, instilling good taste, discipline, morality, and respect for authority. Potter (1998) writes of music education in connection with socialization and standardization of nineteenth century children:

> Music as morality and singing as discipline were at the very root of Victorian church music and, by extension at the heart of the nascent national education system. . . . No one has devised a way of measuring the number of souls saved from the devil by solfa. . . . Discipline and music also combined in the institutionalization of the profession and its pedagogy, which ensured that singing could be defined and measured by certain 'standards. (pp. 81-83)

Sommerville (1990) summarizes a notion of "childhood" in the transition from the nineteenth century to the twentieth that can readily be applied to pedagogical ideals for children's singing at the time:

> Sometime around the turn of this century children, or at least "childhood," reached the highest point it has ever occupied in Western culture. But the definition of childhood that was growing in acceptance was so exalted and so

> narrow that real children had trouble meeting it . . . In the nineteenth century they were asked to play just one role, in an unreal world. It was their task to symbolize the innocence which a severely repressed society felt it had lost. (p. 209)
>
> Determined efforts were made to provide such a childhood for everyone, even if it meant squeezing some of them into the mould. By the turn of the century the major institutions designed to help in this effort had been firmly established. (p. 223)

From the nineteenth to early twentieth century, children were therefore moulded to sound like children through strict boundaries as those suggested by Howard (1898). In addition, moral and social objectives continued to influence the educational philosophies in the mid- twentieth century. As applied to voice education, Rutkowski (1985) states that at this time music educators continued to be concerned "with how the singing voice contributed to developing social values and the total growth of the student" (p. 9).

From a cultural perspective, a great societal shift of the twentieth century occurred in the decades following World War II. The electronic age began in earnest and the 1960s and 1970s anti-establishment ideals and moral backlash of the 1980s were all reflected in the way children sang. In 1979, the children singing, with robust chest voices, *Another Brick in the Wall* by Pink Floyd symbolized the end of youthful rebellion of the 1960s and 1970s (Ulrich, 2002).

By contrast, the 1980s conservatism resulting from the Reagan/Thatcher political climate marked a time of social change characterized by renewed interest in conformity and the status quo. I propose that the contemporaneous interest in cultivating children's voices according to the formal approach was a reflection of the conservative social environment. Emphasis on discipline, proper singing technique, excellence, and achievement were emphasized in the choral materials and literature published for children (Asworth Bartle, 1988; Choksy, 1981; Ehman & Haaseman, 1982; Rao, 1987).

In addition, many pieces of art music suitable for children's voices and composed by master composers were edited, arranged and republished during this time.

In the late twentieth century, postmodern considerations of childhood as a legitimate social construct, contributed significantly to the way children are viewed within society. There have subsequently been remarkable changes in the ways in which music education is viewed. Small (1977) writes of pedagogical hegemony stating that:

> educational conventions and current musical tastes work to reinforce each other, keeping pupils effectively isolated from the world of music as it is in the present, turbulent, exciting, disturbing, possibly as decadent as some maintain that it is, full of good music and bad music but mostly, as in any other period of history, of music of no particular merit or demerit, but also alive and developing and allowing space for the individual to respond directly, not mediated through the judgment of generations. (p. 203)

Woodford (1999) criticizes standardized educational practices: "Once institutionalized, they tend to become self-perpetuating orthodoxies that colour our ways of thinking about, and our perceptions of the musical world; that discourage rational critique while demanding absolute adherence on the part of teachers and students alike" (p. 55).

Singing and The Death of Childhood

With respect to children's singing, the concept of the "death of childhood" could be applied to the disappearance of a particular sound ideal traditionally equated with children or childhood. In addition, by applying this social theory to singing, the blurring of adult and child boundaries would therefore indicate that children today are singing more like adults. I propose that children are indeed singing more like adults in the late twentieth and early twenty-first century, emulating and imitating adult culture and exploring vocal techniques that were once, and in some instances still are, considered dangerous.

First, from a classical perspective in both solo and choral singing, it is clear that adult singing behaviours are manifest in the way children sing today. Usually recommended as an adult endeavour, and at times discouraged before the onset of puberty, private voice lessons are now common for children. In 2002, the National Association of Teachers of Singing hosted the first singing masterclass for child soloists as part of the national conference program. If Charlotte Church or Alex Prior (Alex Prior, 2003) are taken as additional examples, the adult quality of their singing, complete with vibrato and emulations of adult sopranos or tenors, is applauded (Ambrose, 1999). These child singing "prodigies" are greeted with much acclaim.

Second, in the choral world, virtuoso children's choirs such as the Tapiola Choir and the Toronto Children's Chorus appeared during the 1980s, singing repertoire demanding advanced technical skill and a wide vocal range. Yet again, children are demonstrating adult musical behaviour, as this difficult repertoire would likely have been performed by women's choruses in earlier parts of the twentieth century.

In keeping with the vision of childhood as seen through Lee (2001), both select and non-auditioned children's choirs are now experimenting with a global sound ideal, reflecting societal change. Multi-cultural/multi-ethnic influences encourage other uses of the voice beyond traditional, Western classical techniques.

Third, it is naturally assumed in relationship to popular musics that children will sing in an adult manner because popular songs are generally recorded by adults. As seen from the examples of *Snow White and the Seven Dwarfs* and *Pocahontas* in Chapter Two, adult vocalists' idioms are also used in music composed for children to accompany children's animated films. Broadway belting, initially introduced by an adult, Ethel Merman, is a technique used by today's children in school musicals and professional

musical theatre productions. One only needs to consider the influence of karaoke and commercial karaoke products for children, or to watch television programmes such as *America's Most Talented Kid* and *Star Search* to see that vocal styles and melismatic vocal embellishments used by adult popular music artists are imitated by children. The emergence of the child star through these reality television pop star searches creates "little adults" from child performers.

Singing and the Communications Revolution

The optimistic communications revolution perspective is closely connected with the psychogenic theory of DeMause, which finds children of today better off than in previous generations. If applied to singing technique, it is obvious that children, through information accessed by their teachers, have increased access to cutting edge pedagogical information and repertoire than their predecessors. In effect, some children are given better tuition and a better understanding of singing at an earlier age.

The communications revolution idea also focuses on a technological generation gap between adults and children, specifically on the use of technology by children, themselves. Through their use of technology, children theoretically come in contact with an enormous number of audio and visual recordings in a vast array of styles and genres. As a result, they are provided with unlimited opportunities to listen, imitate and model different vocal techniques in diverse styles and genres. Their vocalizations lie outside of the stereotypical sound ideal of the child voice. A communications revolution generation gap occurs because many music educators are not pedagogically conversant in these techniques, styles and genres.

Symbolic and Representational Concepts of the Child Singing Voice

For James (1993), adults' preconceived notions about children's bodies create obvious social and psychological limitations for children. Patriarchal concepts of the child's body can "affirm their [children's] feeling of difference and signal exclusion from, rather than inclusion within, the culture of childhood" (p. 107). This can be applied to the child voice, determining the way children sound and the way children use their voices, i.e. the "sonoric landscape" of children. As discussed in Chapter Two, Rao (1987) contends that "childen physically recreate the ideas of the composer" (p. 6).

Adult classifications, expectations and attitudes can place vocal and musical limitations on the child. Once established, these classifications, expectations and attitudes are perpetuated and considered authentic sound representations of childhood.

Sharpe (1993) concludes that there is a basic stylistic vocabulary for a musical typology of childhood. He states: "There are the actual sounds that children make, but also sounds that are commonly associated with them, or which can, by implication come to represent aspects of childhood" (p. vi). Adults hold well-defined expectations of the kinds of sounds they will hear and sights they will see during a performance. These expectations often elicit childhood memories; adult attitudes, expectations and images of childhood sounds are therefore constructed from feelings based on memory, yearning and longing. Sharpe (1993) writes how these feelings are connected to music.

> Memories of childhood, inevitably selective, are often represented as feelings of nostalgia. This is a basic human sentiment that features in art, as in life. A yearning for the past, and an evocation of the emotions associated with this longing, are often identified with childhood and lost innocence. . . . Any music with childhood as a theme or an inspiration will also exhibit a polarity between the real and unreal world, between innocence and experience, between the potential of the child and the reflections of an adult. (pp. 65-66)

The adult possesses and, at times, desires to preserve a recollection of the child's sonoric landscape. Memories and meaning are connected to sounds from childhood or the sound of children. As music has the power to jog our emotional memory, the sound of a child singing with pure "head" tone can evoke an adult emotional response connected to childhood memories and nostalgia.

> The sense of hearing also informs us about childhood, whether it receives the elemental cries of laughter or tears or the more sophisticated patterns of sounds organized into the complexities of musical systems. Sounds, like visual images, act in many ways. They, too, can be statements or symbols, mirrors of reality or evocations of ideals. . . . A child's world that consisted of silence would be profoundly impoverished; so, too, would be an adult world that was denied the opportunity of evoking and exploring the myths of childhood through the medium of sound. (Sharpe, 1993, p. 61)

It is important to note that many of the terms often associated with "children" and "childhood" –fragility, innocence, vulnerability, incompleteness, homogeneity and asexuality—have also been directly applied to the singing voices of children. As discussed in Chapter One, physiological considerations between the late nineteenth century and twentieth century indicated that children's voices were fragile and vulnerable and obviously not fully developed. Positive terms such as *natural, head tone, clear, light, delicate, flutelike, soft, fine, ethereal, sweet, thin, colorless, or white* were often used to describe the ideal sound quality of the upper register, while negative terms –*chest tone, heavy, dark, thick, hearty, boisterous, or harsh*—described the low register. (Kavanaugh, 1982). Lebon (1986) emphasizes the semantics of "head" and "chest" voice in opera:

> The head voice has traditionally tended to connote the pristine and ethereal and it is no coincidence that the ingénue role in musical theatre is generally sung by the soubrette. As in many operas, the more experienced or worldly character in musical theatre is represented by a heavier voice quality in a lower tessitura. (p. 18)

As discussed in Chapters One and Two, Howard (1898) strongly advocated head voice training for children. His words clearly state that the primary objective for training

was not only vocal, but also to cultivate health, good taste, morality and admittance into high culture:

> Let the beauty of soft, light tone as contrasted with loud, harsh tone be once clearly demonstrated to a class, and the interest and best efforts of every girl or boy who has the germ of music within them will be enlisted. Those who grumble because they may not sing out good and loud may be disregarded, and with a clear conscience. The future will most likely reveal such incipient lovers of noisy music as pounders of drums and blowers of brass. (p. 59)

> The end of voice-culture is the formation of correct vocal habits; but it would seem, that while it is possible to develop the adult voice very considerably in power, range and flexibility, we ought, in dealing with children's voices, to adopt those methods which will protect weak and growing organs. The aim is not more power, but beauty and purity rather. (pp. 69-70)

> Let us not hesitate to teach our pupils to know and to feel that which is beautiful, and good, and true, that our schools may promote the growth of good taste, and stand for the highest morality and the best culture. (p. 138)

Key words that Howard uses to describe the ideal sound of a child are congruent with the concept of children and childhood at the time: *soft, light, beauty, purity, weakness, goodness, truth,* and avoidance of *harshness, loudness, power.* In addition, the ability to use upper register was esteemed and closely connected to ideals embracing goodness, high culture and art; the lower register bore a connection to low culture.

The idea of "height" connected to culture and art is symbolized in sound through the use of the upper register. An apotheosis of the head voice exists; whether considering voices of women or children (Haaseman & Jordan, 1991), a certain importance and reverence is granted to those who can sing high. An element of prestige, mystery or awe surrounds those possessing a high voice.

Vocal "height" can be connected to social class. Potter (1998) offers a physiological explanation for the sound of high culture and low culture, examining the position of the larynx in relation to speech sounds made by a particular social class:

> If we take the idea of a neutral larynx position for the purpose of comparative analysis, it can be said that many working-class speakers of the British Isles and the USA use a relatively high larynx position for normal speech, whereas middle-class speakers of Received Pronunciation lower the larynx to produce the rounded vowels associated with RP [Received Pronunciation]. (p. 170)

As discussed in Chapter One, the upper vocal register is best accessed with a low laryngeal position (middle-class). The low laryngeal position is also required for classical sound production, while belt technique and other vocal production used in popular and non-Western musics use a higher position of the larynx (working class).

"Height" also has a connection with the sacred, Christian perspective. Children's voices singing with upper register vocal production are often described as angel voices. Their sounds are granted an unearthly status; despite the fact that they are of the earth, their voices reach to the heavens. A nineteenth century poem of Cecil Frances Humphreys reflects this attitude, making reference to the cultivation of the voice alongside cultivation of the spirit:

> Ye happier children, who below
> Still share a father's love,
> Remember, earthly love is taught,
> To lead to things above.
> For household duties, loves, and joys
> Losses and cares are given,
> To train the songs of God to reach
> Their Father's house in Heaven.
> (Humphreys, 1848, as cited in Demers, 1993, p. 28.)

In addition to social class and moral superiority, the use of the upper register indicates education and cultivation. Simply by considering the term "head tone" or "head voice", a subtext of intelligence or intellect is implied. In the mid- twentieth century, a connection was made between those who were uneducated, or academically deficient and low register singing Cleall (1955). A positive correlation was found between children's intelligence ratings the their vocal ranges:

> We noticed a marked discrepancy of vocal range between upper and lower streams of academic ability. If dull children think that singing is cissy, the reason may be that their voices are restricted in range. Not only can they not get the high notes so well (except for senior girls), but they cannot get the low notes either. (p. 114)

Considering the positive connotations connected with the head voice, it is no wonder that, aside from physiological reasons cited in Chapter One, there are cogent social pressures which drive music educators to prescribe what is good for their singers.

Another term used to describe head tone is derived from the French term—*voix blanché* (Potter, 1998). Loosely translated in English as *white voice*, or *white tone*, this descriptor is applied to the voices of adult women as well as to child.

Dyer (1997) discusses "whiteness" in Western culture through film and other visual arts. Dyer writes that "white power none the less reproduces itself regardless of intention, power differences and goodwill, and overwhelmingly because it is not seen as whiteness but as normal. White people need to learn to see themselves as white, to see their particularity" (p. 10).

A parallel can be drawn between the way "whiteness" is *seen* and the way "whiteness" is *heard* through the use of the upper register in children's singing voices. Although children's choirs and music educators are not consciously racist, they do relate to three elements that Dyer associates with "whiteness": Christianity, enterprise and imperialism. As applied to singing, Christianity is implied by the ethereal, heavenly sounds of the head voice; enterprise, as generated by work ethic, efforts, specific methods of systematic education and organization of the dissemination of vocal pedagogy; and imperialism, through the assertion that it is a universal rather than a culturally specific value in addition to the appropriation, arrangement and adaptation of non-Western traditions materials into the choral tradition.

Dyer makes connections between "white" and "light" that can be applied to the use of head tone singing in children. Stemming from the Biblical phrase "let there be light", strong semantic relationships have been created between "light", "white", "knowledge" and "power". In addition, Dyer writes of European culture in respect to "light" and "white":

> . . . light has certain implications. It is, literally and symbolically, superior light. The North, in ethnocentric geography, in the map of the world that became standardized in the process of European expansion, is above the South. It is still most common to think in terms of going up North, being down South and so on. This is also the region of North Europeans, the whitest whites in the white racial hierarchy . . . the North is an epitome of the 'high, cold' places that promoted the vigour, cleanliness, piety and enterprise of whiteness. White people come off best from this standardized Northern light, such that they seem to have a special affinity with it, to be enlightened, to be the recipient, reflection and maybe even source of the light of the world. (p. 118)

As applied to the child voice, head tone is the sound equivalent of light. Its relationship to "height" gives the aural illusion of being produced from above. It is bright; it has associations with the ethereal, the heavenly and the sacred. In the choral world, head tone denotes superiority, cultivation and education. Its roots are European; there is much admiration and emulation of the choral sound quality produced by the North Europeans—particularly the British and the Scandinavians. As directly applied to the quotation by Dyer, the terms "high", "cleanliness", and "piety" are suitably applied to head tone. Use of the upper register has often been described as "pure", indicating an implied cleanliness with its use. The word "clean" is synonymous with hygiene; as seen in Chapters One and Two, vocal hygiene is often connected with the healthy use of the voice, i.e. upper register vocal production (Haaseman & Jordan, 1991).

Dyer is primarily concerned with the visual conception of "white" in regard to the use of light on film sets. Special consideration is given to the use of light as applied to central female characters in film. Dyer (1997) uses the term "glow of white women" to

describe how the deliberate use of light affirms the portrayal of these characters. Even in animated film, *Snow White and the Seven Dwarfs* "Snow White herself became the embodiment of American innocence and natural justice" (Kline, 1993, p. 117).

The visual "glow of white women" can be applied to the aural/oral "glow of white children" in their use of pure head tone singing. Often described as "angel voices" (Palmer, 2001) the place of "white" is affirmed in children's singing. In a publication of letters supplying advice for the training of children's choirs, Finn (1940) provides a clear example of Dyer's thesis as applied to sound:

> It has pleasantly fallen to my lot to organize and train a select choir of one hundred and fifty Sisters. They make beautiful sounds. They sing Gregorian Chant, polyphony and modern music. The golden-haired, blue-eyed angels up there over the clouds are lending their voices. (p. 3)

Miller (1997) notes the spiritual qualities connected with "head" voice or white voice in his description of the English school of singing:

> There can be little doubt that the sound produced by the English female soprano chorister is determined by certain vocal aesthetics indigenous to the island. Of direct interest to this study is the extent to which that same aesthetic is at work in the English solo soprano voice. This native quality is often prized by English critics who comment on the purity and the "chaste," "ethereal" qualities of some soprano voices. . . . This predilection for "purity" which marks the adult female soprano in this portion of the English School, stems directly out of the same aesthetic that produces the English boy-treble timbre. (pp. 146-147)

The child head tone has incredible power, evoking adult memory and nostalgia as well as moral superiority, spirituality and class consciousness.

Adult Control, Child Plasticity and the Singing Voice

"White" tone singing and upper register vocal production are well- established sound ideals found in the Western classical music tradition. This type of vocal production is taught with deeply engrained pedagogical canon which has been adhered to for generations. Woodford (1999) makes the charge of "vocal fundamentalism" to those that

unquestioningly accept the traditional pedagogical canon that exists for solo and choral singing:

> Pedagogy and methodology, too, may be received or "canonized" knowledge, meaning that they have been handed down from teacher to teacher without being subjected to critical examination. When held up as definitive and normative, this *disciplinary* knowledge can stifle the development of alternate and potentially more valuable technical and musical means, not to mention the imaginations of those receiving that information, including, most importantly, our students. (p. 54)

A dominant pedagogical canon preserves specific beliefs thus perpetuating certain ideals as well as control. As applied to the present discussion, it could therefore be said that those music educators who adhere to the romantic notion of a standardized sound ideal for childhood are perpetuating a dominant pedagogical canon rooted in the nineteenth century which carefully monitors and controls how children sing.

Many music educators adhere to a particular sound ideal or sound representation of a child's voice, embracing the homogenous, standardized, notion for the sound of children's voices, which places firm limitations on vocal range. For example, Ashworth Bartle (2003) places firm guidelines as to when children should sing using chest voice: "Children should not be using the chest voice until they are twelve years old and have been singing in a children's choir for a minimum of three years" (p. 29). Through the writings of these educators (cited in Chapter Two), it is evident that training is required to discover the "true", authentic singing voice of the child, i.e., head voice (Apfelstadt, 1988a; Ashworth Bartle, 2003; Haaseman & Jordan, 1991; McGraw, 1996; Rupp, 1992).

Like the sociologists who support the "death of childhood" theory, these "vocal fundamentalists" view electronic media and access to popular musics as a negative influence on children's singing. Apfelstadt (1988) anticipates a number of vocal problems for singers of the future as a result of media influence:

1. Many contemporary cultural models are counter-productive to good singing.

2. Children are growing up in a noisy world.
3. Well-meaning adults, parents and other caregivers, may be ignorant of the potential for voice abuse inherent in the contexts cited above, and may actually perpetuate problems by supporting enthusiastic group singing which often amounts to little more than shouting. (p. 2)

Small (1977) sees this vision for canonical training of the voice to be symptomatic of Western thought; nature (i.e. the uncultivated voice of the child) must be commanded and strictly controlled. From his perspective, adults have ultimate power and control, essentially deciding what is good for children. Woodford (1999) writes:

> It is this privileged disciplinary knowledge and understanding that purportedly authorizes musical experts to act as gatekeepers to the great masterworks and to dictate how they ought to be performed. . . . This is what most concerns post-structuralist and other critics—that musical experts impose on society, and on children in particular, their own narrow fundamentalist musical agendas in the well-meaning but mistaken belief that only they know that is *good* music or performances of the same; that they have a monopoly on "the powers of perception. (p. 55)

Other educators (Edwin, 1998; Goetze, 1998, 2004; Thurman, 1999; Welch, 2000a, 2002) seem willing to break through the boundaries that traditionally have limited the child voice. They embrace the positive benefits of media influence that brings new cultural experiences to children through the exploration of a wide variety of musical genres, styles, and vocal techniques. They recognize individuality that exists within children and encourage children to find their own voices. Higginbottom (2002) writes of his approach to training children's voices within the English cathedral choir school in the twenty-first century:

> I seek not so much to impose a vocal character as to allow, encourage, even demand, that each singer exploits to the full his instrument. This is about freeing up the voice, empowering the individual, so that each becomes a potential soloist. I do not deny the beauty of choral sound where no one voice claims independent status, and where the whole is wonderfully blended and controlled. However, this is not the way I have chosen to go. I have preferred the process which gives to each member a self-sufficiency, in which his musical and vocal identity is not defined by the group. (p. 9)

Welch (2004) concurs with Higginbottom's consideration of individual vocal identity as opposed to nineteenth century homogeneity by stating that "we are likely to exhibit a musical profile that is both relatively unique and peculiar to the individual, whilst having some commonality with others of a similar socio-cultural background, age and experience" (Lecture, 2004).

For music educators, especially those educated prior to the mid-1980s, Woodford's charge of vocal fundamentalism leads to a sense of confusion and loss because pedagogical methods carefully established and successfully implemented during the course of the twentieth century are questioned. What was once considered to be "true" and "authentic," with only the best pedagogical intentions is now viewed as restrictive and oppressive. The postmodern criticisms of fundamentalism or chauvinism by Woodford (1999) lead to frustration and disorientation as most music educators clearly take for granted the origins and subtexts of traditional pedagogical methods:

> Choral directors and teachers . . . seldom publicly question the authority of traditional teaching canons. Indeed, many still seem to be believe that there is, or ought to be, a correct method of teaching singing based on purely scientific principles. (p. 55)

As uncomfortable as this position may be, it is necessary to seriously question long-standing tradition and consider other pedagogical viewpoints.

As we have seen, the plasticity of children allows them to be socially adaptable. Rupp (1992) makes an important conclusion concerning a child's vocal plasticity: "Teachers can develop almost any vocal quality they strive for in children because the human voice has an 'inherent flexibility' which enables it to imitate a variety of sounds" (p. 100). Children will ultimately sound like the dominant local culture that may be generated by a sound ideal of a conductor, teacher, or by the influence of electronic media.

To further support the notion of flexibility or plasticity of the child voice, one needs to think back to Ashworth Bartle's (2003) assertion that children within a children's choir will adapt to maintain the sound ideal of the conductor. Furthermore, Welch and Howard (2002) found that a girls' choir will sound like a boys' choir if placed in a suitable environment:

> Given a common musical repertoire and ritual, alongside a general tendency for cathedrals' choir directors to be ex-choristers, it is not surprising that the newly formed girls' choirs are capable of singing with a "boy/masculine" vocal timbre, if this is what the (male choral director requires and works towards (whether consciously or not). The underlying vocal anatomy and physiology are very similar for children between the ages of eight to ten years. Any physical changes that subsequently occur as a result of the onset of puberty are likely to be mitigated initially by an education and training process that has already employed up to two years' daily activity to induct choristers into the dominant performance culture. Such induction practices favour particular vocal timbres. Over a period of time, this vocal rehearsal will favour particular vocal muscle behaviour patterning that, in turn, can strongly influence the development of the skeletal tissues particularly around the oral cavity. This increases the likelihood of similar vocal production habits in the future. (pp. 117-118)

An equally effective example of vocal plasticity within the popular music realm is found in Sheila Behman's rendition of *Desperado* as recorded on Fenger's (1976) *Langley Schools Music Project: Innocence and Despair*. Behman's effective treatment of a text about adult despair was sung with great artistry and "heartfelt, delicate emotion" (Leone, 2002). At the age of nine, Behman was able to sing *Desperado* with a nearly exact stylistic vocal imitation of the Don Henley interpretation recorded in 1973.

The notion of plasticity as applied to a child's voice is a daunting one as it would seem that children will simply sing in any way adults desire; therefore, adults or other dominant cultural forces have the power and control to construct the child voice.

Summary

By accepting the notion that music education is socially constructed, it is possible to see underlying subtexts, political agendas and social motivation behind conventional

educational practices. The examination of the child voice and child vocal pedagogy, when viewed in a social context, reveals remarkable parallels between adult attitudes toward children, the manner in which they sing and analogous pedagogical approaches throughout history to the present day.

Like child vocal pedagogy, the sociology of the child and the history of childhood are relatively recent incarnations. Ariès and DeMause concluded that childhood, as a social construct, is continually changing. The gradual evolution of childhood runs a parallel course with the evolution of a vocal sound ideal for children. The child voice, in effect, reflects societal attitudes toward children. As attitudes toward children and childhood change within a social context, so do approaches to child vocal pedagogy. Reviewing the past one hundred and fifty years of children's singing and corresponding adult attitudes to singing pedagogy and to childhood, then, has shown that children's voices are socially constructed.

Historically, changes in educational and religious thought and technology have strongly influenced adult notions of children and childhood. A number of dualities exist in the way adults perceive children and childhood; these contradictions are centuries old, based on conflicting viewpoints presented by Locke and Rousseau, the Puritans and the Romantics. The emergence of childhood throughout the past three centuries created a distinct separation between what was adult and what was child. Societal conventions held this distinction in place. These nineteenth century notions concerning the distinct boundaries between what is *child* and what is *adult* as well as connections to innocence and goodness are at the root of adult attitudes toward education and representations of children in the visual arts, film, literature and music.

In the late nineteenth century, standardized pedagogical practices were designed to maintain a specific sound ideal for children, with particular emphasis on training the upper voice, or head tone. The sonoric landscape of the child singing with upper register vocal production is a symbol of truth, innocence, goodness and purity carrying significant relevance to adult memory, yearning and nostalgia. The child head voice is also connected to the Western classical music canon with strong connections to Christianity, imperialism, elitism and whiteness.

In the late twentieth century and early twenty-first, there is much adult discomfort because the division between what is child and what is adult is blurred. Children are no longer what adults traditionally perceive them to be; they use their voices in manners that traditionally were considered unacceptable. Despite these shifting perceptions, romantic attitudes regarding children and childhood and vocal pedagogy persist into the twenty-first century. As children possess remarkable adaptability or plasticity to conform the sound ideal to any dominant culture, music educators must recognize that limitations traditionally placed on children's voices are far too restrictive; however, music educators must possess the knowledge and ability to competently move children beyond the limits of standardized pedagogical practices.

CONCLUSION

> Singing, like any other branch of the expressive arts, does not remain the same for very long and changes in the hegemonic hierarchy occur at moments . . . when the dominant party fails to satisfy the desires of those consenting to its hegemonic status. . . . In musical terms, once the currently authoritative style is no longer relevant to the desires and aspirations of those it seeks to dominate, a change in style becomes possible. Symptomatic of this is a preoccupation with the ideological past. (Potter, 1998, p. 191)

This paper has examined the changing perceptions concerning the child voice within Western society from physiological, pedagogical and social perspectives. The above quotation appropriately describes the condition of the child singing voice in the current cultural context. During the twentieth and twenty-first centuries, the onslaught of the electronic age and exponential growth of material wealth have dramatically changed the nature of Western society; therefore, it is expected that in response, attitudes toward the body, mind and voice of the child will experience significant transformation and change.

The changing views of the nature of the child voice as seen from physiological, pedagogical and social perspectives over the past one hundred and fifty years have yielded the following important considerations:

1. Western children of today have the potential for stronger and healthier bodies than their nineteenth century predecessors. As a sound representative of the child body, the child singing voice, once thought to be weak, fragile and delicate, is actually a resilient, durable and extremely flexible instrument. Conclusive evidence suggests that both children (and their voices) are maturing earlier than in previous decades; This being said, it must be remembered that the vocal mechanism of the child differs in significant physiological ways from that of a fully developed adult.

2. The authentic singing voice of the child, appropriate vocal range and use of vocal registers have been contentious issues throughout the entire history of child vocal pedagogy, sparking debate and pedagogical discord. Research from the early to mid-twentieth century concluded that the vocal range of repertoire published for children did not always match actual singing ranges of children, resting higher than what researchers considered the child's "natural" or "comfortable" singing range to be. Starting in the mid- twentieth century, repertoire published for children reflected this research; school music was published in lower, more accessible ranges for children. Studies of graded music series published in the twentieth century show a gradual lowering of vocal range; however, choral music intended for select, professional children's choirs demands a wide vocal range, exceeding both upper and lower limits of the vocal range.
3. Popular music for the singing and listening enjoyment of children are recorded at much lower keys than was evident in the earliest Disney recordings from the 1930s.
4. Social attitudes toward children run parallel with attitudes toward the child voice. During the nineteenth century, this was manifested in a variety of ways:
    i. Standardized education in the nineteenth century established well-defined criteria, limitations and boundaries considered appropriate for children at each age or grade level. From a vocal perspective, well-defined limits concerning vocal range were also established. Children were expected to conform to a predetermined vocal range considered appropriate and healthy for the development of the child voice.

ii. The child voice reflected conflicting attitudes about children and childhood introduced by Locke and Rousseau. Children were considered to be depraved or innocent, nurtured or natural. As applied to the child voice, the head voice is strongly associated with innocence and cultivation, the chest voice with depravity and lack of education. Tensions exist between music educators who belong to "head" voice cultures and those who are willing to lead children to explore the lower vocal register.

5. An examination of the child singing voice from a social context in the twenty-first century reveals that

   i. the division between childhood and adulthood is disappearing. The child voice reflects this societal change through the imitation of adult singing techniques found in popular music recordings; children enrolling in private singing lessons (an activity once recommended only for mature voices); the ability of virtuoso children's choirs to sing difficult, multi-part music with a wide vocal range.

   ii. adult notions of a preferred sound ideal for children's singing are closely connected to adult concepts of children and childhood in society.

   iii. head tone is an aural representation of the child as sweet, pure and innocent and preserves particular childhood memories.

6. Children have the flexibility and plasticity to conform to normative social behaviour; this flexibility is also possible with the singing voice as children are

able to imitate, model and emulate a wide variety of vocalizations in both popular and classical realms.

Important conclusions can be drawn from the above:

1. Recent pedagogical developments concerning children's singing voices, the influences of popular culture, and adult attitudes about children and childhood play extremely important roles in the way children sing. By considering the important parallels drawn in Chapter Three between the social context of children and their singing voices throughout history, it is clear that singing voices are developed via enculturation. Children's singing voices are created in compliance with the dominant local culture. Therefore a "true", authentic voice of a child does not exist.
2. During the past one hundred and fifty years of standardized child vocal pedagogy, children, and their singing voices have changed. In tandem with the notion that "neither culture nor musical taste are static" (Welch & Howard, 2002, p. 118), the child singing voice is not static. Child vocal pedagogy must keep pace with these changes.

It is clear by the number of physiological, pedagogical and social issues which influence the child singing voice, that music educators in the twenty-first century must be prepared to understand a wide variety of singing techniques, musical styles and genres. Choral conductors and teachers of singing are, and will continue to be, faced with students who have explored a variety of singing techniques simply by imitating the musical landscape of a wide variety of musical cultures. To fully understand their students, music educators must now, more than

at any time in the history of child vocal pedagogy, be able to understand not only their own dominant vocal culture but other cultures and pedagogical philosophies as well. To effectively assist students in their individual vocal development, or to help them with potential vocal problems, it is no longer good enough to adhere to one pedagogical canon. Choral conductors and teachers of singing must provide students with a complete understanding of the vocal mechanism throughout the entire vocal range in a variety of vocal mannerisms and vocal styles.

3. In the twenty-first century, popular music plays an integral role in the musical life of Western children from the time they are very small, through listening to Walt Disney songs and other commercial recordings, to the time they reach adolescence and beyond. Because popular music is essentially based on singing, it makes a significant impact on the singing voices of children. Children naturally imitate popular music vocal styles sparked by the commercial successes of television programmes such as *American Idol* and *Star Search* as well as karaoke products designed especially for children.

Ramifications concerning the viability and practical application of this conclusion prompt many questions and concerns. As unlikely as it may seem that one music educator could acquire and effectively teach comprehensive pedagogical knowledge at a high standard that embraces a number of vocal styles, techniques and genres, Thurman's forecast for the future of vocal pedagogy may indeed come true with further study and development of teaching training programmes.

4. Traditional approaches to choral and vocal pedagogy are being challenged to embrace new sound ideals not usually associated with children. Tensions exist between those who consider traditional methods of teaching (i.e. exclusive training of the upper vocal register) as elitist, restrictive and oppressive and those who consider teaching methods which include the training of the lower register and belt technique as harmful, substandard pedagogy. It is important for music educators to acknowledge these tensions and to fully understand the social context from which they originate. By concentrating on pedagogical differences and ignoring or failing to explore new pedagogical practices and ideas, music educators are essentially limiting both themselves and their students. Exclusive concentration on new styles and ideas can be equally as limiting, however—pedagogical and music tradition must also be preserved. The pedagogical vocal canon must continually be reviewed, allowing for change while at the same time adhering to those principles and traditions which are essential for fine singing. Critical thinking is essential in order to allow pupils of singing to develop to their full potential.

Recommendations for Further Study

1. *Science-based pedagogical research is needed regarding the full capability of children's voices with particular emphasis on the safe treatment and handling of the lower register.*

Traditional assumptions advocating the avoidance of the lower register, or protection of the child from use of the lower register, have strongly influenced vocal pedagogy. These assumptions have nearly dismissed the use of the lower register entirely and have, to some degree, perpetuated fear of the lower register. The dismissal of the

lower register may indeed stem from a lack of knowledge. There is actually very little written about the development of a child's lower register. At this point in western culture, both at public school and pre-professional levels, children need to be aware of the mechanics of the chest voice.

Despite increased interest in the development of the lower register and applications of a variety of singing styles including belt technique, it must be acknowledged that the approach to teaching singing in universities and conservatories stems from a traditional pedagogical approach based on the Western classical music canon; the training of the voice for popular music styles is often taught outside of university or conservatory music programs. It must also be acknowledged that teachers who will deal with children's voices often receive very little formal training concerning the voice, classical or otherwise; therefore, most music educators who will teach children are ill equipped to deal with children's voices either in Western classical or popular music styles.

It is crucial that music educators and teachers of voice be educated in all uses of the vocal mechanism throughout the entire vocal register. Whether music educators want to acknowledge that children are indeed exploring the lower register or not, they must realize that avoidance of the lower register will only perpetuate ignorance. Because there are potential dangers connected with misuse of the lower register, guidance is urgently needed to address current vocal styles and trends that cultivate and explore the healthy use of the lower register.

2. *An in-depth study of unison songs published for children's voices from the late nineteenth century and early twentieth will provide concrete examples to contribute to the social analysis of vocal pedagogy. This study should embrace*

methods similar to those used by researchers in the 1960s, 1970s and 1980s that compared and contrasted graded school music series.

Heywood (2001) wrote that "studies of the representation of childhood also have a solid base in the literary and visual texts available to them" (p. 6). Musical texts are equally applicable to the representation of childhood. British publishers such as Oxford, Curwen, or Boosey & Hawkes have had a history of publishing music for children's voices since formal training of children's voice was established. The consideration of vocal range, tessitura, text and piano accompaniments of nineteenth century and early twentieth century unison school songs would reveal not only the social context but the pedagogical context in which these songs were written. These songs were specifically designed with a particular preconceived sound ideal for children.

3. *The popular music of Disney plays an extremely influential role in the lives of young children. A study investigating how young children respond vocally to this music, taking into account their ability to match vocal mannerisms and negotiate extremes of vocal range, would provide music educators with information concerning vocal modeling as well as vocal capabilities of children.*

As children naturally respond to the culture which surrounds them, Disney could realistically be considered the musical "mother tongue" of children from the West. This reality is an important factor in the musical development of children.

4. *Just as sociologists in the last quarter century have begun to consider the participatory nature and agency of children within society, so should the agency of children be recognized within the domain of singing. A study revealing how children articulate their notions of singing, vocal styles, vocal aesthetic and how they (and their parents) consider singing within a social milieu would provide a deeper understanding of how children relate to singing from a physical, pedagogical and social perspective.*

In recent years, voice educators have encouraged students of singing to articulate what sensations are occurring within the body during phonation. Speaking about singing establishes a "singer's vocabulary" which assists in a deeper understanding of singing

technique. This vocabulary can be established at any age. As adults generally lead children to sing in a culturally defined manner synonymous with what adults decide is "good" for children, it would be useful to study how children perceive vocal sensations, and what they think is appropriate for their own singing voices. Working with children to discover their individual perceptions of upper and lower register use would provide new images that would be extremely useful for teachers of singing. Also, by encouraging children to articulate their sensations or opinions about their singing voice or the singing voices of others, the music educator would have an extremely reliable source to judge the effects of the dominant culture that surrounds the child.

5. *As an extension of this study of the child voice within a social context, the adolescent voice should likewise be examined, particularly in regard to voice mutation, comparing and contrasting the experience between adolescent males and females. This phenomenon could be labeled by the term "vocal chauvinism."*

Adolescent boys are given much attention during the time of voice mutation because of the obvious, dramatic vocal changes that are experienced. In contrast, girls receive much less attention throughout the period of their more subtle voice mutation. Unrealistic performance expectations are often placed on girls during their voice change. Girls' voices behave as unreliably as boys' during this time. Their voices are often criticized or negatively described.

6. *Further examination of a child's vocal "plasticity" is needed for a full understanding of the capabilities of the child voice.*

In Chapter Three, James's (1993) term "plasticity"—describing the flexible social behaviour of children—was applied to vocal research conducted by Rupp (1992). According to Rupp, children possess an inherent ability to conform to any sound ideal placed upon them by adults; therefore, children possess vocal "plasticity". Further

information considering this notion would be beneficial for voice educators as abilities and capabilities of children's voices would be clearly defined.

7. *A study is needed concerning children's singing within non-Western cultures to trace the evolution of their singing voices within their native culture as well as view the effects of Western popular culture on their singing.*

Through the examination of children's singing within non-Western cultures it would be possible to consider other vocal colours, potential vocal range and use of vocal registers that realistically could be accessible to Western children. In addition, a comparison of the child's singing voice within Western and non-Western cultures may provide further evidence of socio-cultural influences and subsequent evolution or change.

As stated in the Introduction, my initial research objective was designed to prove that the head voice was unequivocally the true voice of the child. After examining this issue from multiple perspectives over a period of nearly two years, my primary conclusion (that an authentic voice of a child does not exist) came as a surprise that truly challenged many of my pedagogical beliefs. My initial discomfort was based not only on ethnocentricities and personal biases but also on pedagogical insecurities related to a lack of knowledge concerning approaches to singing technique outside of the classical tradition. This discomfort has waned with the acute realization that pedagogical journeys never end. They are always beginning.

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