University of Iowa
Iowa Research Online

Theses and Dissertations

2010

Training singers to be literate musicians: the integration of musical, linguistic, and technical skills in the private voice studio

Michelle Joy Crouch
University of Iowa

Copyright 2010 Michelle Joy Crouch

This dissertation is available at Iowa Research Online: http://ir.uiowa.edu/etd/657

Recommended Citation
Crouch, Michelle Joy. "Training singers to be literate musicians: the integration of musical, linguistic, and technical skills in the private voice studio." dissertation, University of Iowa, 2010.
http://ir.uiowa.edu/etd/657.

Follow this and additional works at: http://ir.uiowa.edu/etd

Part of the Music Commons

TRAINING SINGERS TO BE LITERATE MUSICIANS: THE INTEGRATION OF MUSICAL, LINGUISTIC, AND TECHNICAL SKILLS IN THE PRIVATE VOICE STUDIO

by

Michelle Joy Crouch

An essay submitted in partial fulfillment
of the requirements for the
Doctor of Musical Arts degree
in the Graduate College of
The University of Iowa

July 2010

Essay Supervisor: Professor Katherine Eberle

Copyright by

MICHELLE JOY CROUCH

2010

All Rights Reserved

Graduate College
The University of Iowa
Iowa City, Iowa

CERTIFICATE OF APPROVAL

D.M.A. ESSAY

This is to certify that the D.M.A. essay of

Michelle Joy Crouch

has been approved by the Examining Committee
for the essay requirement for the Doctor of
Musical Arts degree at the July 2010 graduation.

Essay Committee: _____
Katherine Eberle, Essay Supervisor

_____
Stephen Swanson

_____
John Muriello

_____
Robert C. Cook

_____
Michael Everson

ACKNOWLEDGMENTS

I would like to thank the members of my committee: Dr. Katherine Eberle, Professor Stephen Swanson, Dr. John Muriello, Dr. Robert Cook, and Dr. Michael Everson for their generosity in agreeing to engage with me on this subject and assist me with the writing of this paper. I am thankful for their time, the experience and expertise embodied in their input, and their support.

Carol MacVey did more than she will ever realize to open up new ways of thinking to me. She also has been generous with her time and spirit, and I am deeply indebted to her for conversations and for her example of masterful teaching.

After the flood destroyed Voxman Music Building, I realized that at the center of the music community at the University of Iowa was the Rita Benton Music Library. The entire University of Iowa Library, besides being an extraordinarily rich composite of materials, employs a knowledgeable, helpful, and often under-appreciated staff. Each one of the RBML staff—Ruthann, Amy, and Susan as well as numerous student workers—has helped me immeasurably. Particularly in the semester when they alone had access to the music library materials, they went far above the call of duty in helping us to continue our research in spite of the disaster. The granting of a graduate carrel on the fourth floor of the Main Library was also a mercy beyond words in the year after the flood.

Capanna, Iowa City's artisan coffee roaster, deserves special mention for serving the best coffee in Iowa City. This document is only a small part of what it has enabled me to do.

Family and friends around the world have supported me in numerous ways. I'm thankful to each one.

TABLE OF CONTENTS

LIST OF FIGURES …….. v

INTRODUCTION ……. 1

CHAPTER ONE LANGUAGE AND MUSIC AS CORRELATES ……..…. 18

Music as a Language …… 19
Divergent scholarly agendas …….……..... 19
Is music L1 or L2? ……...…….…. 22
Second Language vs. Foreign Language …..…. 25
Shared cognitive processing …..……..... 28
Literacy acquisition ……..…….…… 31
Skill Development: Experimental and Psychological .. 36
The skill of reading ……..…….…. 37
Theories of reading ……..…….……. 40
Challenges for literacy pedagogy …….…… 42
Correlations between Musical and Verbal Literacy 46
Sound ……...……..……... 46
Temporal unfolding ……..……. 48
Decoding symbols ……..……..…… 50
Pedagogical concerns ……..…...……..……. 53
Paradigms of Motivation …….…… 55
"Ideal selves" ……...……58
Teaching and cultivating motivation ..……..… 62
Enemies of reading classrooms ……... 65

CHAPTER TWO MUSIC READING: THEORY OR PRACTICE? ……..…... 70

History of Music Reading Issues …….……..…… 71
College Curricula and Musical Literacy Pedagogy …. 78
What do music theorists do?…….…….…... 80
Attitudes conveyed by prioritization of skills ... 96
Specific Practices that Discourage Musical Literacy..100
Over-reliance on the keyboard ……...…. 101
Confusion of solmization systems ……. 110
Conceptual vs. experiential rhythm…..……... 117
Premature introduction of analytical categories ……120
Lack of time on task ……..…..……... 127
Lack of literacy reinforcement in applied voice lessons ……...…….…… 129

CHAPTER THREE MUSICAL LITERACY IN THE PRIVATE VOICE STUDIO 131

Caution with Memorization Requirements ……..… 134
What Do Voice Teachers Do? …..……..……. 140
Overcoming an Internal Physical Pitch Domain.…... 146
Guido's Hand and solfeggio hand signs …... 146
Bodywork and reading …….…….. 149
Verbal language in the singing art ……. 151
Automaticity ……..……..…….. 153
Integration of music and verbal language …. 156
Rhythm is expressive …….…… 158
Interface between Performance and Theoretical Pedagogies …….....……...…….....……. 160
Integrative curricula ….……..……. 163
Interlocking of language systems ….……... 165

CONCLUSION …….……. 169

BIBLIOGRAPHY …….. 174

LIST OF FIGURES

Figure 1 LA- and DO-based minor syllables translated into symbolic code 113

INTRODUCTION

A time was when learning to read music was considered part of the general skills imparted by a public school education. The National Association for Music Education (MENC) statement from 1965 reads, "The generally educated person is literate. He understands arithmetical and musical symbols. He is able to respond to the music notation of unison and simple part songs. He can follow the scores of the instrumental compositions."[1] That time is past. The skill of musical literacy has now become even a questionable outcome of higher music education. This is not to say that musical ability has declined, but musical ability is substantially different than musical literacy. Veteran music pedagogues struggle to cope with a less structured, more fragmented pre-college musical world and as a result, schools of higher music education have made compromises in entrance standards and in curriculum that have resulted in overall lowered standards of musical literacy. Micheál Houlahan and Philip Tacka reflect critically on higher music education, "Do we continue to graduate music students who are (in terms of aural skills) musically illiterate, or do we strive to prepare the largest percentage possible for the responsibilities of their musical world?"[2] Carl Schachter observes, "Far too many gifted and intelligent graduate students are finding it necessary to learn tonal theory almost from the beginning."[3] More poorly prepared college music applicants in the 1990s have been attributed to reductions in public school education, to a general shift away from music

---

[1] Music Educators National Conference (U.S.) Committee on Music in General Education, *Music in General Music Education* (Washington D.C.: MENC, 1965), 5.

[2] Micheál Houlahan and Philip Tacka, "The Americanization of Solmization: A Response to Timothy A. Smith," *Journal of Music Theory Pedagogy* 6 (1992): 137.

[3] Carl Schachter, "Diversity and the Decline of Literacy in Music Theory," *College Music Symposium* 17/1 (Spring 1977): 152.

making as a leisure activity, and to changing musical values away from formally educated and refined skills toward exhibitions of raw talent. The cumulative result: "increasing numbers of students with the interest and talent to study music at the college level who lack the requisite skills."[4] The issue does not necessarily reflect poor quality of college instruction, but rather too little time in a four-year college degree program to compensate for the musical input that formerly took place during the first eighteen years of life. David Damschroder, who teaches music theory at the University of Minnesota, reflects,

> The result, to which I can testify after having administered at least a thousand placement examinations to entering transfer and graduate students from a wide variety of schools, is that the American educational system is producing degree-holding musicians very few of whom possess what might be appropriately labeled 'competence' in the skills component of their musical training.[5]

These are not empirical statistics, nor do such comprehensive statistics exist, but many would concur with Gary Karpinski, author of *Aural Skills Acquisition: The Development of Listening, Reading and Performance Skills in College-Level Musicians*, that the cumulative anecdotal evidence surrounding the decline in musical literacy seems overwhelming.[6]

Perhaps more than any other musicians with formal classical music education, singers have been enabled to "succeed" without learning to read music. Sixty years ago, Sergius Kagen suggested that the extraordinary demands the college curriculum placed

---

[4] Richard Hoffman, William Pelto and John W. White. "Takadimi: A Beat-Oriented System of Rhythm Pedagogy," *Journal of Music Theory Pedagogy* 10 (1996): 7.

[5] David A. Damschroder, "Flexibility in the Theory Classroom: Strategies for the Management of Diversity," *Journal of Music Theory Pedagogy* 3/2 (1989): 186.

[6] Gary S. Karpinski, "Reviews of Recent Textbooks in Theory and Musicianship: 3. Aural Skills," *Music Theory Spectrum* 15 (1993): 241-256.

on singers needed to be re-examined in light of the fact that singers often enter college with minimal musical preparation. His observation is truer than ever:

> An average singer often enters a music school with little knowledge of musical notation, and practically always with a very haphazard knowledge of it. He may have an excellent ear and a good natural voice. Now, in four or five years, he has to learn so much about music …that the simple, most elementary matters of basic ear training and basic familiarity with musical notation are lost in the shuffle.[7]

Possible contributing factors for such minimal preparation include little or no general music at the elementary level, and (elementary) teachers' preferences for teaching choral music by rote with no one taking the initiative to move students from rote to note learning.[8] Even at the high school level, as the research for one dissertation revealed, "while seventy percent of choral teachers surveyed believed that sight-singing should be taught to all their students, only thirty-seven percent considered sight-singing instruction a principle objective of their choral programs and up to fifty-nine percent did not provide any time for sight-singing training in their advanced choral ensembles."[9] Not surprisingly, colleges find it difficult to compensate successfully for the gaps in students' earlier education. As a result, the poor musicianship of singers is jested about by many, even celebrated by some, certainly lamented by others, but is too often merely accepted as an insurmountable weakness singers exhibit, a fallacy that persists despite the existence of musically literate singers. No one feels singers' illiteracy more keenly than

---

[7] Sergius Kagen, *On Studying Singing* (New York: Dover Publications Inc., 1960), 24-25.

[8] Thomas M. Scott, "Sight-Singing in the College-Level Choral Program," *The American Organist* 29 (1995): 68.

[9] Pattye Johnson Casarow, "Sight-singing Pedagogy: Analysis of Practice and Comparison of Systems as Described in Related Literature," DMA Dissertation, Arizona State University, 2002.

choral directors, for whom conducting and rehearsing music with illiterate singers represents an ongoing challenge. Of necessity, illiteracy has shaped their very discipline. The exceptions to illiteracy most often, as noted by researchers, choral directors, and college aural skills teachers, are singers who have also had some kind of instrumental instruction.[10]

Proceeding from this unfortunate reality, this paper hopes to engage some of the persisting challenges for the cultivation of musical literacy particularly among singers in higher education, who represent stereotypically some of the least successful students of musicianship and theory, but are by no means the only students for whom becoming musically literate presents a struggle. Drawing on insights from Second Language Acquisition (SLA) literature and cognitive theories of reading with their resultant implications for linguistic pedagogy, this paper intends to demonstrate some reasons for the weak outcomes of musicianship pedagogy, particularly for singers, and to propose some possible ways forward that would help to overcome the widespread failure to successfully teach singers to be effective independent musicians. The criticisms will implicate not only college-level musicianship and theory pedagogy, but also voice pedagogy's difficulty with integrating musicianship principles with the learning of vocal technique and repertoire. The aforementioned reliance in general music education on teaching vocal music by rote can be seen as a contributor to the low musical literacy

---

[10] Janice N. Killian and Michele L. Henry, "A Comparison of Successful and Unsuccessful Strategies in Individual Sight-Singing Preparation and Performance," *Journal of Research in Music Education* 53/1 (2005): 51. For more commentary about this problem, see also Kenneth H. Phillips, "Teaching Singers to Sight Read," *Teaching Music* 3/6 (1996): 32; David Butler, "Why the Gulf Between Music Perception Research and Aural Training?" *Bulletin of the Council for Research in Music Education* 132 (1997): 46; and Kathy Thompson, "A Qualitative Study of Metaphors for Pitch Perfection," *Journal of Music Theory Pedagogy* 18 (2004): 95.

levels with which particularly singers tend to arrive at college. But elementary and secondary music educators are trained in colleges, so the criticisms ultimately come full circle to rest with higher education curriculum and pedagogical practice. Specific criticisms aside, the most cherished goal of this paper is that by juxtaposing three distinct areas of scholarship—second language acquisition (particularly the place of reading in that process), musicianship and aural skills pedagogy, and vocal pedagogy—areas of commonality and mutual benefit would emerge particularly between theoretical and performing musicians, not by blurring the distinctions between their specializations, but by making their specific areas of expertise clearer and more distinct, and yet at the same time, by showing that both rely on literacy to thrive.

In order to understand the complex issue of music literacy pedagogy in higher education, an initial comparison with two other disciplines may be helpful. The first comparison is with English Literature, wherein a student's quest to become an expert in English literature necessitates that s/he develop a comprehensive knowledge of the world of written English. The eventual selection of specialized literatures of expertise involves enormous personal investment and numerous formal and informal encounters with a vast array of literature. Attempting to accomplish this goal without being able to read would represent an unthinkable handicap. By the same token, no one, having accomplished this goal and finding herself in the position of a college instructor of English literature would expect to be required to teach students how to read.

The second example considers a student's pursuit of a foreign language specialization, which exhibits some important initial differences with the study of English Literature. The foreign language quest begins even at the college level with basic

language courses, not strictly with literature. Language is also the beginning point for English literature, but the acquisition of language and literacy occurs entirely pre-college. The process of learning a second language does not usually involve the tidy separation of learning to speak first before learning to read, as it does for a first language.[11] Listening to, speaking, reading, and writing a foreign language are acquired more or less simultaneously: college language classes in the more commonly taught languages of French, Spanish, Italian, and German, have textbooks to read, and writing assignments to accomplish, sometimes before one is even taught how to correctly pronounce the words one is writing and reading. Because students begin the pursuit of a second language with an intimate acquaintance with their first language, spoken and written, the process proceeds with greater intensity than the more gradual first language acquisition of a child. If a student focuses intensely on a foreign language for a number of years, he is able to find his way into the written literature of the language. However, professors of eighteenth-century French literature will not likely also teach Beginner French, or even Intermediate French. Foreign language students may eventually become fluent speakers of the language, to greater or lesser degrees of success, but this does not and cannot occur solely through literature classes. To what degree fluency can be attributed to literature classes and reading, and to what degree fluency is attributed to socially constructed

---

[11] It is interesting to note the development of Chinese language pedagogies in this regard. As Chinese language characters are not phonologically accessible, some (western) theorists have established pedagogical practices based on the belief that students learn best if they begin learning Chinese vocabulary through the use of Romanized Chinese before the Chinese characters are introduced. The Chinese words are presented using the Roman alphabet and diacritical markings to indicate the four tones of Mandarin Chinese. Native speakers of Chinese who teach the language tend not to understand this theoretical issue in the same way and introduce the characters earlier in the learning process. I am grateful to Dr. Michael Everson for this example of theoretical conflict on this issue in linguistic pedagogy also.

language learning environments, personal motivation and individual language aptitude is an interesting question, but it is clear that fluent language speakers require more than literature classes to acquire spoken proficiency. As a point of departure for the following discussion of music literacy pedagogy, the key observations are that a would-be foreign language specialist requires the skill of literacy from the outset, and that language acquisition is a pedagogically distinct area of expertise from the study of literature.

As a preface to the discussion of college music pedagogy, it is important to understand that music in higher education is more similar to that of language and literature than to that of a technical skill, although both aspects are essential in professional musical practice. Indeed at one time, the transmission of musical skills resembled technical training and apprenticeship schema more than they do today. However, the study of music has come to reside culturally in liberal arts colleges and universities, not in technical training schools with carpentry and auto mechanics. Formal music education centers on a written body of music literature spanning hundreds of years. Music's most profound quality lies in its audible realization in real time. Unlike linguistic literatures, the practice of sitting at home (silently) reading musical scores by the fire is a very rare pastime, even among musicians. Without music's live, in-time realization in the presence of a listening public, however formal or informal, the study of music loses its most distinctive and important aspect. However, when it comes to classical music performance, live realizations of music are strongly governed by conventions and long-standing performance practices proceeding from written scores. The core curriculum of formal music education is not improvisation or extemporaneous music making, but the interpretation of written music. Thus one would think it should be just as difficult for an

illiterate student to succeed in a university music program studying classical music as it is for a literature student who cannot read. But the truth is that singers are able to and commonly do achieve graduate degrees in voice without being able to read music with a fluency analogous to that which a literature student must possess.

A young college student's desire to become a professional musician exhibits both some striking similarities and some strange differences with English literature and foreign language specialization. Similar to specialized degrees in foreign languages, introductory courses on the language of music and basic musical literacy are often necessary for musicians even at the college level. Unlike foreign language students, but similar to English literature students, music students already "know how to speak the language." This is evidenced primarily by college auditions, for which a singer, for example, must perform an array of standard vocal literature, and may also be asked to demonstrate facility with basic musicianship skills: perhaps some pitch recall, aural identification of intervals and chords, and a simple sight reading exercise. However the performance of the prepared literature is often weighted more heavily than literacy skills in the department's decision to accept them or not.

A college freshman singer will almost certainly have had considerably fewer years of voice lessons than her cohort in the piano department, who likely started piano lessons at six or seven years old because his parents decided it was important. By contrast, the singer's motivation to take voice lessons may have had little to do with a musical education, but quite possibly centered on improving her chances at successfully auditioning for the high school musical or a select choir. In this case, the student may have presented this goal to her voice teacher, and the voice teacher, wanting to satisfy a

new student, may have temporarily abandoned the usual efforts to expand the student's musical knowledge and focused instead on coaching her through her audition piece. If the coaching was impressive and the student succeeded in getting the part in the play, the voice teacher may then have been enlisted to coach her through her music for the show, but the singer's engagement with written music may well remain basically nonexistent. If the singer received affirmation for a beautiful performance, and found performing to be a satisfying experience, she might decide to pursue vocal music in college. The voice teacher may help her learn audition pieces extremely well, and the student may audition at several colleges. The committee of voice professors evaluating potential voice majors may well unanimously agree that she has enormous vocal potential and recommend her acceptance. If musicianship and sight-reading segments of auditions reveal poor reading skills, she may simply be placed in a music rudiments class before being allowed to begin the first-year theory and musicianship courses. This is not the story of every college voice major, but it is by no means an uncommon story. Extended formal musical study is a more common college prerequisite for instrumentalists than for singers.[12]

College voice professors rely heavily on their colleagues in theory and aural skills to teach these kinds of students how to read music, and are sometimes mystified why this arrangement does not produce better results. At least three initial reasons can be offered to explain this dysfunction, although discussion of some specific problematic pedagogical

---

[12] Dr. Michael Everson brought to the author's attention a possible linguistic parallel in so-called "heritage learners," who learn the parents' native language at home—that is, hear it and speak it—but often do not read it. These "heritage speakers" have distinct enough language learning needs to have brought about the establishment of organizations like the National Heritage Language Research Center. An area for future research could entail exploring how the knowledge gained in this specialized field may correlate to the needs of singers who similarly have extensive musical performing experience, but have learned to sing entirely by rote and have not learned to read.

practices will be reserved for extensive discussion in chapter two. First, professors of theory are not typically specialists in music literacy pedagogy, but rather in some aspect of music literature. Although there are exceptions, music theory scholars are not primarily interested in teaching illiterates how to read. Nor should they be by the standards we apply to other disciplines, any more than we expect a specialist of eighteenth-century French literature to teach French for Beginners. Music theorists are understandably much more interested in creating and engaging paradigms of musical structure and in-depth analyses of musical language, assuming that someone has already taught students how to read. It used to be true that theorists were also composers, but that is no longer necessarily the case. In many colleges, music theory has evolved—or by some accounts of music theory history, reverted—into a discipline distinct from both composition and performance. Thus teaching illiterate musicians—some more, some less—to read music amounts to a burden that comes with the territory of being a college music theory professor, but rarely represents true professional expertise or commitment. Secondly, a theorist's way of reading music is often quite different from the reading skills required by performers. Theorists read music for different reasons than performers read music, and thus they read in different ways. As a result, the categories they emphasize in their efforts to teach literacy understandably reflect the theoretical values of their discipline. Aural skills and musicianship classes are often conceived as nothing more than laboratories for the theory class. Thirdly, many theorists were at one time piano majors, meaning that their primary orientation is the keyboard. This observation can be seen to have a broader historical basis in harmonic music theory developing in conjunction with the emergence of the middle-class, whose living room centerpiece came

to be the piano.[13] The keyboard has the least abstract realization of pitch of all the instruments and is able as a solo instrument to enact vertical musical structures. Woodwinds, strings, brass, and voices, characterized by progressively less visibly precise realizations of pitch, experience those kinds of vertical structures primarily within an ensemble, the experience of which must be fully integrated with the skills of reading music. Even the most brilliant theorists are often ill-equipped to help students to cultivate these kinds of reading skills.

Thus, this paper will begin by building a case that, among other similarities that may be observed between the two languages, the process of learning to read music has much in common with learning to read a verbal language. Upon establishing this, the first large question, addressed in chapter two, will be whether reading music occupies a prominent enough position in the goals of college music curricula. If fluent music reading skills are thought to be a relatively inferior goal by the very people who are in charge of teaching musical literacy, poor music reading outcomes are no surprise. The paper will argue that musical literacy is more distinct from theoretical analysis than it is typically presented to be in college curricula. Theoretical analysis is understood generally as the interpretation of written musical language beginning with its functional structures, roughly comparable to the study of grammar in verbal literature. The argument will be offered that aural skills and music reading instruction will be more successful if separated from music theory in both pacing and content, and more specifically if it is viewed as foundational. The projected result of such a separation is not only improved literacy, but

[13] That the keyboard has been replaced in contemporary living rooms by the television, is likely not an inconsequential indicator of the decline in general musical literacy.

also the enabling of theoretical music instruction to accomplish its goals as a discipline more successfully as well.

Finally the paper will turn to the college voice studio. Singers not uncommonly express strong dislike for theory, not primarily because it is difficult, but because it seems irrelevant to the rest of their musical lives. Voice lessons are closer to what they envisioned college music to be about: honing their performing skills, improving their vocal technique, and preparing to audition for musical productions. Modern vocal pedagogy literature does not much concern itself with musical literacy, although few would claim that an opera singer, whose job demands memorization, would be worse off for being a good reader, any more than professional actors suffer as a result of being able to read scripts independently.[14] While most voice teachers would not claim that learning to read music is unimportant, working on technical aspects of students' singing, acting, and performing forms their primary task. Furthermore, voice teachers' expertise is usually not literacy development, so they may feel somewhat at a loss to help illiterate students even if they recognize how important musical literacy is and have the desire to help. The third chapter will seek to demonstrate that all the best efforts at holistic voice teaching fall short of truly holistic training if they do not integrate skills of reading music with ideals of vocal sound and sound production. Music literacy or the lack of it shapes the way that voice teachers are able to interact with pitch and rhythmic elements of vocal literature, how they integrate verbal language components, and above all how they guide students to an experience of the multi-facets of singing that feels unified and integrated.

---

[14] John Sloboda, "The Psychology of Music Reading," *Psychology of Music* 6/2 (1978): 4.

With so much of a singer's competence riding on musical literacy, voice teachers must take seriously what incoming students with poor musical literacy need most in order to develop into fully competent musicians.

Some specific challenges face anyone who wants to teach singers how to read music, whether in the aural skills classroom or in the private voice studio. Thomas Scott comments perceptively, "In spite of instruction at the college level singers still have difficulty sight-reading. This would seem to indicate that although aural skills classes are taught at all schools of music, either they lack the proper content, the instructors are not qualified to present the matter, or students lack the motivation to master the material."[15] The first challenge for any teacher may be to connect with a student's motivation to learn to read music. If students have accomplished their vocal achievements thus far without having to read music, a teacher may well have to invest substantial time and energy in stirring motivation within students to make learning to read a priority. Motivation has been a major area of theorization in second language acquisition for more than twenty years, but theories of motivation have changed substantially with the trend toward globalization. The resulting changes to motivation theory in second language have increased its appropriation potential to the acquisition of musical language. And theories of motivation have much to offer music teachers in structuring both methodology and content. In reference both to musicianship and theory pedagogy and to applied voice lessons, this paper will seek to apply some theories of motivation to music pedagogy.

Besides overcoming low motivation to read music, which may well characterize young singers' mindsets at the start of their college music education, singers have two

---

[15] Thomas M. Scott, "Sight-Singing in the College-Level Choral Program," 70.

very special challenges that other instruments do not face in learning to read music. The first is that the voice's physical domain for pitch is invisible, and any specificity with respect to pitch as related to the instrument is reliant on non-generalizable individual perceptive categories. The second is that at the same time as singers read musical language, they also read a linguistic language, often a foreign language they do not speak fluently. These are not inconsequential obstacles but deserve special attention, specific instructional time and assistance, and adequate time to devote to mastery. Because singers must concern themselves with two languages with separate grammars and modes of meaning, one may argue that even more than instrumentalists, singers must *over-learn* musical skills in order to have adequate attention stores to devote to the many other aspects the art of singing simultaneously requires of them. Linguistic fluency is often measured empirically in terms of speed and accuracy, although the larger concept of fluency is certainly much more complex.[16] Speed in decoding is important in developing musical literacy in musicians of all instruments, because rhythmic flow and precise timing of execution are essential to the desired result: the right pitch at the wrong time is the wrong pitch. If timeliness is an issue for language, it is much more an issue for music. For a singer the question is not one of moving a digit fast enough or shifting positions on a finger board, but of mentally hearing the musical patterns in advance of vocalizing

---

[16] Theories of automatization surround ideas about the best ways of producing fluent second language speakers and readers, but are extremely complex and not without conflict. See Robert DeKeyser, "Implicit and Explicit Learning," in *Handbook of Second Language Acquisition*, ed. Catherine J. Doughty and Michael H. Long (Malden, MA: Blackwell Publishing, 2003), 313-348; and "Automaticity and Automatization," in *Cognition and Second Language Instruction,* ed. Peter Robinson (New York: Cambridge University Press, 2001), 125-151.

them, much as occurs with language. This same process ideally needs to happen for all musicians, but it is exposed as an unavoidable necessity with singers.[17]

Regardless of the instrument, there should be no schism in students' minds between learning to perform music well on their primary instruments and learning to be good musicians. How many times a singer has offered in defense of poor reading skills, "Well, Pavarotti couldn't read music." The point is not the veracity of this claim, which is not substantiated in any literature to this author's knowledge, and may or may not be true. Rather, teachers must recognize the role they have to play in dissuading singers from believing that literacy is somehow a threat to natural talent. This is particularly true in view of a popular culture that believes effective artistic expression is "natural," requiring no engagement of the intellect. It will always vote for a "soulful" natural performance (usually combined with physical and social attractiveness) over honed musical craftsmanship, as evidenced by the iconic status given to *American Idol* performers, for example. As a result, a schism between raw talent and honed skill is likely to persist if learning to read music is not made an integral priority in the education of musicians.

In actuality, both performing music and theorizing about music are enabled by the gradual and deep internalization of all the nuances of musical language. Each side of the discipline tends to focus on different nuances of musical language, but they both depend for their best practice on excellent literacy skills. This paper desires to encourage both music theory teachers and music performance teachers to support and develop musical

---

[17] Kodály quoted a well-known saying of Hans von Bülow's: "He who cannot sing, be his voice good or bad, should not play the piano either." Kodály told his students that he had heard the finest singing in the world by the world's worst voice—Toscanini in rehearsal. Apparently Toscanini's most frequent direction to the orchestra was "Cantare!" "Sing!" See Zoltán Kodály, "Who is a Good Musician?" *Selected Writings of Zoltán Kodály* (London: Boosey and Hawkes, 1974), 193.

literacy to the highest standard possible, for the betterment of both expressions of musical knowledge. While the practice of effective public performance may have diminished in literary circles, or perhaps shifted to the realm of theatre performing arts, public musical performance is not likely to diminish, as the live performance of musical literature is its most beloved aspect, both inside and outside academic circles. One cannot reasonably expect a student to perform written music brilliantly if the reading process is laborious and conceived as entirely separate from its performance. Furthermore, there is reason to hope that if better musical literacy rates were achieved, not only vocal music making would be enhanced, but all music students—even dumb singers—would more readily and competently enter into theoretical music study. Many music students assume that sufficient musical literacy is knowing *about* music or identifying the categories used in music notation or theoretical analysis, without ever being able to confidently and fluently know what the music sounds like in their heads as they do when they read words. Rather, the central goal of reading instruction is described as helping children "learn how to read effortlessly so they can ignore the reading process and focus on the content."[18] This is no less true of music than it is of words. Teachers of both music theory and music performance desire students to be able to direct their attention to the "content" of the language, but this is an impossible and unreasonable expectation if students are unable to read. Students can only learn to read if someone intentionally teaches them and enables the process to develop into fluency.

---

[18] William Grabe, *Reading in a Second Language: Moving from Theory to Practice* (New York: Cambridge University Press, 2009), 36.

Michael Rogers, one of the foremost American authorities in music theory pedagogy and a strong advocate for the teaching of musical literacy, observes that the actual relationship between music analysis and music performance is not well represented in the literature. "No convincing overall intellectual scaffolding has yet been assembled to demonstrate exactly the nature of [the relationship between analysis and performance]."[19] One alternative to erecting scaffolding of this nature would be to encourage the chasm between these two worlds to widen, such that eventually no such relationship need be demonstrated. However, such a complete separation does not seem tenable, given that music as an aural phenomenon is what draws people to study it at all. It seems more fruitful to reflect on what such scaffolding would comprise. Through its linguistic line of inquiry, this paper will seek to suggest that the underdeveloped concept and underestimated skill of musical literacy has the potential to contribute a great deal to such a scaffold. "Performance" is an important aspect of second language pedagogy also, but it does not refer to the way a person delivers a memorized recitation in the language. It rather refers to how skillfully a person demonstrates competence in the language in all its dimensions: how accurately they comprehend what they hear, how easily and imaginatively they spontaneously originate speech in that language, how expressively and thoughtfully they read it, and how compellingly they write it. If music pedagogy moved toward this definition of performance, literacy could become a point of commonality that could begin to assemble a workable apparatus for mutual benefit between music performance and music theory.

---

[19] Michael R. Rogers, "How Much and How Little has Changed? Evolution in Theory Teaching," *College Music Society*, 40 (2000): 115.

CHAPTER ONE: LANGUAGE AND MUSIC AS CORRELATES

This paper is by no means the first to draw parallels between linguistic and musical languages. These contemplations have a lengthy history, dating back at least to the tenth century *Musica Enchiriadis*, whose unknown author draws an extensive parallel between music and language. The analogy in itself can be viewed as something of a departure from the classical ancient "disciplinary" separation between music—considered along with geometry, arithmetic, and astronomy, to be a numerical art of the quadrivium—and language, a concern of the trivium: grammar, rhetoric and logic.[20] Powers suggests that the very appeal to linguistic analogies for musical thought can be thought to be largely responsible for inducting performed music into halls of rational analysis in the first place. The robust German tradition of music and rhetoric, beginning in the early sixteenth century and continuing in various transformations until the nineteenth century, systematically applied the medieval categories of performed music and theoretical music to musical composition.[21] In yet another vein, questions of origin characterize some theorization. Eighteenth-century French philosopher, Jean-Jacques Rousseau (1712-1778) and English scientist Charles Darwin (1809-1882), each speculated on the origins of both languages. Both concluded that music and language must have had a common origin but Rousseau thought music developed first and Darwin reasoned that language predated music.[22] Steven Brown proposes a third possibility: that

---

[20] Harold Powers, "Language Models and Musical Analysis," *Ethnomusicology* 24/1 (January 1980): 48-49.

[21] Ibid., 51-54.

[22] Mireille Besson and Angela D. Friederici, "Language and Music: A Comparative View," *Music Perception* 16/1 (Fall 1998): 1-2.

music and language proceeded from a common ancestral stage and diverged in the evolutionary process. He calls this the "musilanguage model."[23] To wit, music theorists, music educators, ethnomusicologists, psychologists of various specialties, and music cognition researchers continue to highlight commonality between varying aspects of the literate disciplines of language and music.

Music as a Language

Divergent Scholarly Agendas

Modern interests in connecting linguistic language and musical language stem from divergent scholarly agendas, which poses certain interpretive challenges for the reader of the ensuing literature. Cognitive scientists, for example are interested in the development of both music and language as distinctive characteristics of the human species. They are interested to see what interrelations may be empirically demonstrated between the cognitive processes for each, even though the representations of each language are completely distinct from one another. They ask questions such as how mental hierarchies might be formed, and if and to what degree language and music interfere with one another.[24] Another interested group of scholars, music educators, unanimously agree that the aural experience of music ought to precede the study of musical notation, even among students who are cognitively able to think symbolically. The sad necessity of trying to prove that arts education is vital and should be a protected

---

[23] Steven Brown, "The 'Musilanguage' Model of Music Evolution," in *The Origins of Music*, ed. Nils L. Wallin et al. (Cambridge, MA: MIT Press, 2000), 276-277.

[24] Besson and Frederici, "Language and Music: A Comparative View," 2-3; see also Diana Deutsch and John Faroe, "The Internal Representation of Pitch Sequences in Tonal Music," *Psychological Review* 88 (1981): 503.

part of the curriculum has recently motivated calls among music educators for research that may be able to demonstrate music instruction's ability to reinforce linguistic reading skills in early childhood development.[25] The development of linguistic reading skills has by no means been perfected, but it is at least still a primary goal for general education.[26]

Music theorists, itself a complex category of scholar and musician that will be discussed in more detail later in this paper, have also theorized extensively about the connection between musical language and linguistic language. However, given that theories of language have themselves undergone a great deal of change over time as well, the resultant analogies are inconsistent and not easily harmonized, and no single one can rightly claim to be representative. Powers succinctly characterizes all such analogies as falling into one or more of three categories: semantics, phonology, or grammar-syntax,[27] all of which are vibrant linguistic concerns not only for their theoretical value, but in their practical application to language and literacy pedagogy. Ironically, Powers draws attention to the early work of Fred Lerdahl and Ray Jackendoff, who, at the time of this article, were in the early stages of constructing a formal theory of tonal music based on the goals and methodologies of generative linguistics as articulated by Noam Chomksy. Their theorization falls into the grammar-syntax category, and the limits of Chomskian claims of universality, both in itself and in its application to music, are foreseen by

---

[25] Lois Hahn, "Music Reading and Language Reading: Correlations in Processes and Instruction," *Bulletin of the Council for Research in Music Education* 93 (late summer 1987): 42; Dee Hansen and Elaine Bernstorf, "Linking Music Learning to Reading Instruction," *Music Educators Journal* (March 2002): 18, 21, 52.

[26] Sebastian Wren, "Ten Myths about Learning to Read," SEDL Newsletter, 2002. Accessed at http://www.sedl.org/pubs/sedl-letter/v14n03/2.html

[27] Harold Powers, "Language Models and Musical Analysis," 1.

Powers, intrigued as he is with their formulation.[28] Lerdahl and Jackendoff's appeal to grammar-syntax seeks to describe the musical intuitions of an idealized experienced listener of tonal music.[29] They seek on the one hand to articulate the kinds of musical organizations that listeners hear (in terms of analytical systems), and on the other to deduce what knowledge is necessary in order for the listener to arrive at these organizations (in terms of formal grammar, i.e. a system of rules that facilitates knowledge). Besides their Chomskian linguistic point of departure, musically they are strongly influenced by Schenker's theories. For example, they use his reductive approach to pitch events to discuss "time-span reduction" in music. They also relate parameters like relative metric stress in music to linguistic prosody.[30] Such an approach is by no means the only one possible between the two complex systems of music and language, but just as Chomsky's ideas were revolutionary at one time, Lerdahl and Jackendoff's ideas had their day.

A more recent and very different theoretical connection between language and music is articulated in *The Origins of Music*, whose contributors consider the evolutionary basis of the connection between the human capacity for language, which until recently has dominated contemplations of the human evolutionary process, and

---

[28] Ibid., 47-48.

[29] Ray Jackendoff and Fred Lerdahl, *A Deep Parallel between Music and Language* (Bloomington, IN: Indiana University Linguistics Club, 1980), 1-2. This was followed by their more major work, *A Generative Theory of Tonal Music* (Cambridge, MA: MIT Press, 1983). Their primary concern is not the organization of the music, but with the organization of what an ideal music listener is capable of hearing. They distinguish a listener's intuition from thought that has been submitted to formal instruction, a separation that seems artificial and unquantifiable.

[30] Ibid., 4ff.

human capacity for music. Wallin coined the term "biomusicology" to describe the study of reciprocal effects music and language have had on the biological development of the human vocal tract and the neurological developments of the human brain, and vice versa, the effects those developments have had on developments in linguistic and musical utterance.[31] Of particular interest for the pedagogical considerations of this paper, is the contemplation about modes of transmission of musical knowledge, specified as "how musical repertoires of a culture are organized; the nature of musical pedagogy; use of a musical notation system, tolerance versus intolerance to change; use of guided improvisation in pedagogy and performance, etc."[32]

Is music L1 or L2?

Verbal and musical language analogies expressly discussed in terms of literacy acquisition are far less common than one would think. Two in-depth comparisons between music and language as related to literacy pedagogy are not recent, but are still worth considering for the light they shed on the problem of musical literacy development. Emily Brink developed the language analogy substantially in her Ph.D. dissertation of 1979, and some twenty years earlier Stanley Fletcher wrote a lengthy article characterizing the reading of both languages under the theoretical rubric of code detection. Fletcher equated a linguist's learning to negotiate the ambiguities of spelling in a language with a musician's learning to hear tonally. He sought to demonstrate how the process of teaching a child to read in a first language instructs the process of teaching music reading. While the Fletcher article is rooted in the now dated whole-word approach

---

[31] Steven Brown et al., "An Introduction to Evolutionary Musicology," in *The Origins of Music*, ed. Nils L. Wallin et al. (Cambridge, MA: MIT Press, 2000): 8-9.

[32] Ibid., 18.

to verbal literacy acquisition, and gets somewhat bogged down in theoretical one-to-one equivalencies (i.e., sung intervals = phonemes of music; written intervals = graphemes etc.), he observes some helpful cues aural skills teachers can take from linguistic literacy teachers, namely, that aural patterns need to be already fully established vocally before written codes will make sense to a learner, and that association between unfamiliar written code and familiar spoken code must take place sufficiently often, under sufficiently interesting circumstances, and present itself as sufficiently interesting and rewarding to the student in order for it to become habitual.[33] This idea is thoroughly upheld in the wider verbal literacy acquisition literature.

For Brink, whose dissertation Michael Rogers endorses as "one of the best pedagogy dissertations" on the connection between music theory and ear training,[34] only two fruitful aspects of interaction between linguistic and musical language exist. One the one hand, she distinguishes between competence and performance, a distinction this paper is interested in cultivating, although in a less Chomskian direction. On the other, she privileges the linguistic aspect of syntax as the primary point of correspondence between verbal language and music. She uses this to argue for college-level aural skills to be viewed and taught as applied music theory, privileging analytical cognitive goals for

---

[33] Stanley Fletcher, "Music-Reading Reconsidered as a Code-learning Problem," *Journal of Music Theory* 1 (1957): 82, 84.

[34] Michael R. Rogers, *Teaching Approaches in Music Theory: An Overview of Pedagogical Philosophies*, 2nd ed. (Carbondale, IL: Southern Illinois University Press, 2004), 206.

aural skills and conceding any attempt to theorize in musical terms the natural progression one readily observes in first language acquisition and literacy development.[35]

Another music educator has contributed significant thought to the analogy between music and language in a more holistic way. In his 1992 lecture "Music Curricula and the Future," Harold Best envisions better results for music education, including higher education. He challenges music educators, presumably of all descriptions, to distinguish between thinking about musical language, thinking in it, and "thinking up" in it. In verbal language, we typically think far less about our native language than we think in it and think up in it. Best's point is that music pedagogy should likewise not consider thinking about music to be a substitute for thinking in music or creating brand new musical utterances.[36] Thinking about music ought to strengthen our thinking in it and "thinking up" musical utterances, just as it does in linguistic language education.

All three of these music educators have useful perspectives to offer on the analogy between language and music, but they do not all conceive of language in the same way. Their differences in musical understanding begin with their points of departure for the language analogy. Fletcher and Best use first language acquisition, assuming fluency and competency as the goal. Brink uses foreign language acquisition, assuming fluency is not the primary goal. The distinction between the two language acquisition concepts is important to articulate before further understanding can be reached in regards to their analogies with music.

---

[35] Emily R. Brink, "A Cognitive Approach to the Teaching of Aural Skills Viewed as Applied Music Theory," (Ph.D. diss., Northwestern University, 1979), 37, 47-49.

[36] Harold Best, "Music Curricula in the Future," *Arts Education Policy Review* 94/2 (1992): 4.

Second Language vs. Foreign Language

The enormous language acquisition literature itself contains much to recommend it to music educators. With its concern for the processes involved in cultivating effective language skill, parallels are readily visible to an interested music educator. However, neither superficial engagement with the analogy nor highly theoretical comparison that is not rooted in practice has succeeded in providing unanimous lines of inquiry and theorization among music educators. The particular similarities and differences recognized between linguistic and musical language systems themselves indicate biases about the nature of language, and even the nature of knowledge itself.

In second language acquisition literature, first language (L1) and second language (L2) acquisition are treated somewhat distinctly. The primary difference between L1 and L2 seems to be the uniquely "natural" process of learning a first language. In a normal nurturing environment a child attains a first language without regard to individual language aptitude, motivation, or even overall intelligence. Compared to learning a second language, children acquire their first language incidentally, without desire, effort or focus.[37] First language acquisition is also completely distinct from learning to read it. Besides basic speech development, including both comprehension and autonomous production of speech, children are prepared for learning to read by hearing stories read aloud, seeing reading modeled as an essential activity by their parents, learning to

---

[37] Peter Skehan and Pauline Foster, "Cognition and Tasks," in *Cognition and Second Language Instruction*, ed. Peter Robinson (Cambridge: Cambridge University Press, 2001), 183-184. The authors also unwittingly hit upon another aspect of verbal language that is both different and similar to musical language. They observe that "unlike any other skill…(algebra, tennis, driving, playing the bagpipes) language can work well despite poor execution." Unlike verbal language, which can work well despite poor execution, musical language can be "executed well" without fluency (i.e. complexity, accuracy, competency) in the language.

recognize the letters of the alphabet and beginning to associate them with familiar objects, sounds, and eventually words. However, all the different sounds the letter 'A' makes in English, for example, are not presented to the child in a lecture, nor all at once. That knowledge is absorbed gradually into the child's mind by a systematic reading regimen where incremental increases in the knowledge of written language occur primarily through the experience of reading, not in lectures about language, nor lectures about reading. Reading in turn shapes aspects of more advanced language acquisition such as vocabulary development, comprehension of more complex speech, and capability for abstract thought. But basic comprehension and the ability to spontaneously produce the language occur entirely before the process of beginning to read.

Second language acquisition occurs somewhat differently regardless of how one identifies it. For example, some language acquisition specialists distinguish between different kinds of second language learners. Second language is often distinguished from foreign language study, in which the learner studies a foreign language completely outside its real world context of usage largely devoid of environmental support. Foreign language offerings in North American colleges or universities are one example of this type of language study. The goal of such foreign language study is not necessarily quasi first-language fluency, although some students do aspire to high levels of fluency. Many are only completing the language requirements of a degree program or acquiring sufficient reading ability to carry out research. Second language study, on the other hand, more specifically refers to children, adolescents and adults, who learn a second language in a context in which they are required to use the language effectively if they wish to function as full members of the society, and have opportunities for native language input

from which to construct language grammars.[38] Many research studies in second language acquisition are done in immigrant communities for whom success in speaking, reading and writing the new language has a profound effect on the success of their lives as immigrants.[39]

Second language and foreign language pedagogy share a common possibility of referring to a learner's knowledge of the first language in explaining or introducing the second language. In the second language acquisition field this is referred to as the "L1-L2 connection." For example, a teacher could identify parts of speech or sentence structure that correlate to the first language. Teachers have different approaches to the integration of first languages in second language instruction, some eschewing the practice altogether. The very possibility depends to some extent on what similarities exist between the languages. For example, more similarities exist between German and English than between Mandarin and English. Thus a first language may play a large or small role in the acquisition of a second language. But in first language acquisition, no such point of reference exists at all. Literacy skills themselves become important "either when the L2 learners cannot read in their own language or when the writing system of their first language is very different."[40]

---

[38] Rod Ellis, *The Study of Second Language Acquisition*, 2d ed. (New York: Oxford University Press, 2001), 5-6.

[39] For examples, see Catherine J. Doughty and Michael H. Long, ed. *Handbook of Second Language Acquisition* (Malden, MA: Blackwell Publishing, 2003); Peter Robinson, ed. *Cognition and Second Language Instruction* (New York: Cambridge University Press, 2001); Robert C. Gardner, *Social Psychology and Second Language Learning: The Role of Attitudes and Motivation* (London: Arnold, 1985).

[40] Vivian Cook, *Second Language Learning and Language Teaching* (London: Hodder Education, 2008), 124.

Thus the question of whether first language or second language is the more apt analogy with musical language acquisition needs to consider the unique aspect of musical language: it does not exhibit the categories of representation and referential meaning of linguistic language. Looking at it this way, the process of learning musical language may be more appropriately suited to an analogy with first language acquisition because the comparisons between the two languages are superficial at best, and may be completely disregarded quite successfully. However, the experience of having learned a language—understanding, speaking, reading and writing—is a process as John Sloboda says, that although it is not completely satisfactory at explaining the acquisition of musical language, still has much insight to contribute to understanding that process. In this regard he registers surprise at the comparatively little time that has been spent in discussions of the psychology of music reading, particularly when the ability to read music is an irreplaceable asset for a musician in much the same way as the ability to read words is an essential qualification for full membership of adult society.[41]

Shared Cognitive Processing

Aniruddh Patel has proposed a hypothesis based on growing evidence that language and music are more closely related cognitively than previously believed. Although their syntactic systems are completely distinct in form, purpose, and use, they may in fact share common neural resources for their processing in working memory.[42] He

---

[41] Sloboda, "The Psychology of Music Reading," 3. See also John Sloboda, *Exploring the Music Mind: Cognition, Emotion, Ability, and Function* (New York: Oxford University Press, 2005), 27, 164.

[42] Aniruddh Patel, "Syntactic Processing in Language and Music: Different Cognitive Operations, Similar Neural Resources?" *Music Perception* 16/1 (Fall 1998): 27, 40.

proposes comparative research that is hypothesis driven and based on empirically grounded cognitive theory in each of the two domains.[43] This kind of thought goes beyond theoretical analogies between the two languages, and builds on those analogies as the basis for cognitive research. Such research has potentially strong implications for singers, given that their musicianship involves both languages. However, this type of research is difficult to achieve, requiring the dedicated expertise of both cognitive scientists and singers to be truly useful.

Vivian Cook, a British scholar of second language acquisition, has recently presented another interesting point of commonality between the two languages. He asserts that in second language acquisition research, the process of listening as a vehicle for learning language has become the most discussed aspect in recent years. He cites studies that have determined that effective second language learners used both top-down strategies (listening for intonation or phrases) and bottom-up strategies (listening for words) compared with ineffective learners who concentrated on the bottom-up process.[44] He distinguishes between field-dependent and field-independent cognitive styles, recognizing that the most important application of such a distinction pertains to the language classroom.[45] While he does not directly apply these observations to music learning, the applications are clear for musicianship teachers if one accepts that the cognitive processes involved in language learning may be similar. For example, he

---

[43] Aniruddh Patel, "Language, music, syntax, and the brain," *Nature Neuroscience* 6/7 (2003): 674.

[44] Cook, *Second Language Learning and Language Teaching*, 125, 128.

[45] Ibid., 151.

summarizes what L2 students need to learn, assuming they are already literate in one writing system: visual tracking from left to right, making and recognizing shapes, learning complex spelling rules, learning a sound-based writing system, and learning a meaning-based writing system.[46] All of these points have correlates in reading musical language. But the observation of commonality between theories exposes another challenge, namely how one is able to distinguish between cognitive research that has useful applications to the language classroom and that which does not.

Jan Hulstijn admits confusion among second language teachers about how to assess the usefulness and applicability of behaviorist and cognitive studies, "and to what extent the principles of these two paradigms can or cannot exist."[47] To a large degree, behaviorist paradigms seem to be aligned with performance musicians and cognitive paradigms with theoretical musicians, but this distinction is never absolute. While recognizing the superior nature of cognitive psychological processes for the purposes of information processing and retention, Hulstijn at the same time recognizes the difference between knowing receptively and knowing productively: being able to understand and being able to speak. He argues that the learning objectives for second language acquisition must address both sides of knowing, and they are not equally represented in the cognitive research.[48] This critique of the research that informs second language

---

[46] Ibid., 97.

[47] Jan H. Hulstijn, "Intentional and Incidental Second Language Vocabulary Learning: A Reappraisal of Elaboration, Rehearsal, and Automaticity," in *Cognition and Second Language Instruction*, ed. Peter Robinson (New York: Cambridge University Press, 2001), 285.

[48] Ibid., 263.

pedagogy, and by implication the process by which pedagogical strategies for language acquisition are formulated, exposes a flaw in Emily Brink's analogy of language for aural skills and musicianship training. This will be discussed in greater detail in chapter two of this paper.

The basic elements of linguistic language and musical language are more dissimilar than similar. Their representation, for example, is completely unrelated: no one confuses words with staves and notes and rests. Having said that, the fact that both are represented as symbolic systems of signs that form recognizable sequences and are translated into audible sounds that occur in identifiable patterns and measurable phrases is not an insignificant reason we refer to both of them as languages. However, music is not a communication system in the same way that language is. As John Sloboda points out, "It is relatively self-contained and has no major consequences for domains of cognition beyond music."[49] Similarly, Besson and Friederici describe music as being largely "self-referential" as compared with language, which has "reference to extra-linguistic designated space."[50] Their call is for much more joint research to occur, recognizing the inherent difficulties in effectively comparing two systems that are each complex and contain distinct areas of expertise.

Literacy acquisition

This paper is primarily concerned with the similarities of language and music in their respective literacy acquisition processes, most especially the acquisition of accurate and fluent reading skills and how they contribute to the development of complex musical

---

[49] Sloboda, *Exploring the Musical Mind*, 71.

[50] Besson and Friederici, "Language and Music: A Comparative View," 5.

thought. In this regard, it is important to understand to what degree the audible realization of the sign is connected to the written form. Sloboda explains that the primary medium of language is sound, but that in themselves, the sounds are not language. Language is the result of what the human brain does with these sounds, in "[mapping] these sounds onto internal structures. When some kind of map has been made with these structures then language can be said to have come into existence."[51] He divides the structures into the same three categories Powers identified for the literature: phonological, which refers to how the brain parses continuously changing sounds into discrete units; syntactic, which takes these phonological building blocks and orders them according to specific rules; and semantic, which allows meaningful exchanges to take place between brains which share knowledge of these structures and use them to convey meaning. However, even in verbal language this process does not always occur in the same way. Vivian Cook explains:

> The big division in the writing systems of the world is between those based on meaning and those based on sounds. The Chinese character-based system of writing links a written sign to a meaning [not to its spoken form]… Hence speakers of different dialects of Chinese can communicate in writing even when they cannot understand each other's speech. The other main type of writing system in the world links the written sign to its spoken form rather than its meaning. The English word (table) corresponds to the spoken form [teibl]; the meaning is reached via the spoken form.[52]

In practice, Cook acknowledges that the two routes between writing and meaning are mixed, and the degree of that mix will depend at least partly on how one is taught to read, both in first and second languages. Sloboda references mounting evidence that

---

[51] Sloboda, *Exploring the Musical Mind*, 176-77.

[52] Cook, *Second Language Learning and Language Teaching*, 88.

language reading does not always involve a sight to sound translation.[53] But the process of learning to read one's first language, even after years of debate, requires children to orally vocalize the words. "At virtually any time in this nation's history, one could have walked into an American elementary school and expected to encounter children reading orally. Oral reading has been used exclusively, thoroughly discouraged, banned, debated, resurrected, and is still firmly entrenched in classroom practice."[54] Silent reading develops a later, not with beginning readers, and one standard remedial practice for poor readers is oral reading.[55] Certainly in a first language, and presumably also in a second language, whether or not a reader becomes accustomed to "hearing" the words on the page or recognizing only the meaning of the orthographic symbols will depend in part on the import given to the sounds of the words, their flow, pacing, and animation in the learner's process of gaining proficiency.[56] One may also observe that literacy even in a first language is not necessarily synonymous with a confident and expressive rendition of the sounds of the words, although one is unlikely to find such a reader to be anything less than highly literate. A person who spontaneously reads well aloud, i.e., one who reinforces the referential meanings of the words with an expressive delivery of them,

---

[53] Sloboda, *Exploring the Musical Mind*, 11.

[54] Richard L. Allington, "Oral Reading," in *Handbook of Reading Research*, ed. P. David Pearson et al. (New York: Longman, 1984), 834.

[55] Ibid., 832.

[56] In the second grade the author was taught to read aloud "with expression." The teacher always affirmed expressive reading as pleasing to listen to and easier to understand than monotone reading. When students encountered new vocabulary aloud, the teacher had an opportunity to correct decoding errors. Besides that, the emphasis was expressivity; the only way the teacher could assess that was by hearing us read aloud. Quite likely, expressivity also enabled an assessment of comprehension.

even in one's first encounter with them, is unfortunately the exception instead of the rule, likely associated with very specific professions: actor, orator, captivating lecturer, lawyer, or minister. A person could be literate without this skill, but no one with this skill could be illiterate. Unfortunately, only in very rare linguistic language situations would one be able to discern such a skill among adults, so little do we read aloud.

Erin McMullen and Jenny Saffran have recently touched on this connection between vocalization and comprehension. Their analogy begins with first language acquisition when they observe that parents are fully aware that their infants understand more language than they are able to produce. They use this observation to suggest that skill to perform music is not necessarily dependent on music lessons so much as on "ubiquitous exposure" in the child's environment. Their article goes on to ask at what point in both linguistic and musical development competence becomes tacit, unrelated to production skills.[57] They come up against the dissimilarity between music and linguistic language in the semantic domain, the domain of meaning, but astutely recognize that not all linguistic language functions in the same way semantically. "Perhaps a good place to look for such a link would be poetry," they suggest, "which, like music, makes use of basic prosodic cues but requires cultural and syntactic knowledge for full appreciation."[58] Their article goes on to demonstrate various ways that linguistic language and music may be acquired by the same learning mechanism, and argue that we need a way to accommodate those indications while upholding the neurological research that indicates

---

[57] Erin McMullen and Jenny R. Saffran, "Music and Language: A Developmental Comparison." *Music Perception* 21/3 (2004): 290-91.

[58] Ibid., 299.

distinct areas in the brain for language and music.[59] Patel concurs with this assessment, calling for more research dedicated to understanding how syntactical processing mechanisms overlap. He proposes a conceptual distinction between "syntactic representation and syntactic processing, i.e. the distinction between long-term structural knowledge in a domain, and operations conducted on that knowledge for the purpose of building coherent percepts."[60] This idea rests on the theory that at least some processes necessary for syntactic comprehension exist in brain areas separate from those where syntactic representations reside, and on this basis Patel can call speech and music "foils for each other in the study of brain mechanics underlying complex sound processing."[61] While his interest may be primarily in understanding brain mechanics, these notions have implications for music literacy pedagogy. Speech may be more than merely a loose analogy for music, and understanding actual connections between linguistic language and music should inform the way music teachers expect musical literacy to develop. Additionally, recognizing that singers do not merely sing "language" but usually sing "poetry," a specialized linguistic form with stronger similarities to musical semantic processes, should motivate an interest on the part of teachers of singing to investigate how these two processes can integrate more closely in the singer's learning process. This will be discussed in greater detail in chapter three.

---

[59] Ibid., 303-305.

[60] Patel, "Language, Music, Syntax, and the Brain," 676.

[61] Ibid., 674.

Skill Development: Experimental and Psychological

In addition to describing some of the ways in which musical and verbal languages intersect theoretically and especially cognitively, it is also instructive to understand principles of skill development, of which reading is the most ubiquitous example. Skill development provides still other rationales for pedagogical practices in both realms. One of the most important observations among teachers of skills is the psychological distinction between experimental processes and differential processes in human development. Experimental psychology identifies structures and processes that are common to every human being, through which hypotheses can be oriented toward predictions, tested with controlled experiments and whose data can be manipulated. Differential psychological analysis seeks to identify the specific developmental attributes on which people differ, and seeks to explain differences in performance according to these theories.[62] The process of separating the differential from the experimental is by no means a clear-cut one. This paper is a good example of the interaction of these concerns. By isolating singers with little to no instrumental background from instrumentalists, the paper seeks to elucidate, however incompletely, causal factors that could explain differences in musicianship performance between these two groups.[63] The hope is that such thought could inform the pedagogical practices applied to each group in teaching

---

[62] Peter Skehan, "Individual Differences in Second Language Learning," *Studies in Second Language Acquisition* 13/2 (1991): 275.

[63] It proves difficult to calibrate such differences precisely and beyond all empirical doubt, because the acquisition of musical skills is not limited to controlled educational environments, and the contingencies in people's ad hoc exposures to musical input are infinite. People are not even conscious of them all. This is another way in which music exhibits characteristics of first language acquisition.

music literacy. Discerning differences in performance is relatively overt; discerning the contributing psychological differences is much more complex.

The skill of reading

Most in the developed world consider reading to be a basic skill that everyone must learn. But as reading experts are quick to point out, reading is a relatively recent development in human history. It is difficult to imagine human civilization without the invention of reading, so thoroughly has it shaped our cultures and our very thought processes.[64] Reading music is an even more recent development than reading words. Understanding the complex and incremental process of learning to read cannot be effectively isolated from how students learn any academic skill, and understanding theoretically which approaches support learning and which discourage learning is essential for teachers of all skills.[65] Second language pedagogy has theorized reading in terms of L2 input, and has analyzed how learners interact with such input in both formal instructional situations and more informal natural settings.[66] Such distinctions are also pertinent to music learning, although less to written than to aural musical input. Written linguistic language has a more ubiquitous presence in general culture than written musical language, forcing teachers of second languages to consider so-called "environmental print." Musicianship teachers on the other hand do well to consider the prevalence of aural musical intake in culture. With the advent of individual listening devices and individualized sources for obtaining music, awareness of all the particular

---

[64] Grabe, *Reading in a Second Language: Moving from Theory to Practice*, 4.

[65] Ibid., 17.

[66] Russell S. Tomlin and Victor Villa, "Attention in Cognitive Science and Second Language Acquisition," *Studies in Second Language Acquisition* 16/2 (1994): 195.

varieties of musical discourse in the aural diets of students becomes impossible for teachers to assimilate. If anything, the predominance of an aural orientation to musics that do not even really exist in literate forms is a ticklish obstacle faced by teachers of music literacy, with its potential for making literate music seem irrelevant to students' informal listening habits. Even students who study literate music in college music programs do not necessarily listen for pleasure only or even primarily to literate musical genres and styles. Musicianship teachers recognize a tremendous gap between the world of aural musical input in which their students are immersed and the world of musical literacy to which they seek to introduce them. Considering that for each person, just as great a gap at one time existed between speaking and listening to words and reading words, there is no reason to consider this gap to be insurmountable in music. However, failure to acknowledge it would be foolish.

The gap between learning speech and learning to read is referred to by one literacy scholar as the first great myth of learning to read, namely that learning to read is a natural process. Indeed, as he points out, if learning to read were natural, everyone would learn it, and poor or declining literacy rates would be no source of concern to those warring against the "literacy gap."[67] Such myths are not harmless, but rather are serious deterrents to students learning to read. Several other myths of literacy acquisition bear an uncomfortable resemblance to the way in which music literacy is approached. Two bear mentioning. Myth number three in Wren's list reads: reading programs are "successful." And myth number ten asserts: if it is in the curriculum, then children will learn it.[68] Both

---

[67] Sebastian Wren, "Ten Myths about Learning to Read," 1.

[68] Ibid., 1-2.

of these approaches to literacy development ignore what research has repeatedly shown, that the knowledge and skill of the teacher is the most important and irreplaceable variable in any reading program. Philosophies that drive curricula do not make an impact on student performances, but the knowledge, sophistication, flexibility and creativity of individual teachers certainly do. If developers seek to make curricula successful "off the shelf" without the aid of highly qualified and dedicated teachers, they seem doomed to failure.[69] Further comment will be made about this later in the paper as it pertains to music literacy instruction, but teachers do well to note that reading itself is a learned skill, not a natural one. Furthermore, teaching musical literacy requires an immense amount of skill, a skill not to be equated with theoretical analysis, any more than diagramming complex sentences is synonymous with reading.

Learning to read, at least in alphabetic languages, requires the linguistic skill of "phonemic awareness." Phonemes are abstract units of language, not the sounds themselves, but underlying categories of sounds. For example cat, hat, fat, sat, bat, mat, rat, tat, that, and pat are distinguishable from one another because of one phoneme. To a linguist, the 'p' of pat is not exactly the same sound as the 'p' of spat, but they are members of the same category of sounds. People have to learn phonemes in order to learn a language, but for the most part they do so unconsciously. The reading process takes what students know intuitively and makes it conscious. Phonemic awareness must lead to skills of decoding in order for reading skills to develop. It is possible to have high skills in phonemic awareness and low decoding skills, but it is not possible to have low phonemic awareness and high decoding skills. Skill in decoding seems to be dependent

---

[69] Ibid.

on a basic level of phonemic awareness in order for reading skills to develop.[70] Without getting bogged down in one-to-one equivalents, a very similar process would seem to characterize the development of musical reading. Students with musical aptitude will be able to accurately vocalize a tune in imitation without an ounce of musical instruction, and will be able to distinguish it from another tune that uses some of the same sounds. These skills are not sufficient to enable music reading, but without these skills, the musical decoding process cannot develop, whereby the particular ordering of sounds is made conscious and associated with particular symbols.[71]

Theories of Reading

This issue is at the heart of a great debate in second language acquisition: how and to what degree implicit knowledge (i.e., without awareness) can become explicit knowledge, (i.e., that learned with awareness) and vice versa. Or to ask the question somewhat differently, "How do bottom-up data-driven processes interact with top-down conceptually-driven processes?" The question is not whether both cognitive processes exist, but how they interact in the learning process.[72] This debate is by no means limited to learning language or reading. Learning theories vary in the way they conceive of the processes relating to one another. For example, one prominent learning theory, the ACT-R theory, proposes that:

---

[70] W. A. Hoover, "The Importance of Phonemic Awareness in Learning to Read," SEDL Newsletter 2002, 1-4. Accessed at http://www.sedl.org/pubs/sedl-letter/v14n03/3.html

[71] Numerous music educators have documented this process; two of the most influential are Zoltán Kodály and Edwin E. Gordon.

[72] Richard Schmidt, "Attention," in *Cognition and Second Language Instruction*, ed. Peter Robinson (New York: Cambridge University Press, 2001), 4-5.

> learning follows a general path from cognitive (or declarative) learning (learning the what, or attending at some level) to associative (or procedural) learning (practicing, building strong associations, and gaining fluency) to autonomous learning (developing automaticity in calling up and using knowledge resources and information).[73]

While this theory provides an adequate account for the incremental nature of the reading process, (and automaticity is indeed the target for learning to read), it is not without contention that all learning follows a route from declarative knowledge through procedural knowledge, to arrive at automaticity. Particularly for reading, which emerges out of procedural skills (i.e., motor skills) of speaking and singing, a teacher must be careful not to assume the path begins with declarative learning. There are numerous cognitive accounts of learning that emphasize that the single best predictor of learning is time on task.[74] Automaticity in speaking a second language cannot develop, even given the best possible explanations of "the what" of language, unless there is substantial time dedicated to procedural concerns of using the language. The same is true for learning to read fluently.

Other reading theories distinguish between different levels of reading based on their intent. The spectrum spans from the fastest, scanning (where speed is more important than absolute accuracy), to skimming, to rauding (a word coined to describe a reader's combination of listening comprehension, i.e. "auding," and decoding skills), to reading to learn (where absorbing new information is the goal), to reading to memorize, the slowest reading process, involving rehearsal of actual form. Empirical analysis

---

[73] Grabe, *Reading in a Second Language: Moving from Theory to Practice*, 17.

[74] Brian MacWhinney, "The Competition Model: The Input, the Context, and the Brain," *Cognition and Second Language Instruction*, ed. Peter Robinson (New York: Cambridge University Press, 2001), 87.

according to this framework is careful to distinguish between these different purposes for reading, and to support those intentions in the laboratory.[75] Grabe's advice to language instructors is to give students meaningful reasons to read for different purposes, and thus to teach them by experience how they can choose to read differently when they are trying to achieve different goals.[76] More will be said later about the differences between music theoretical reading, and the kind of reading performers need to be able to do, and the result when teachers fail to recognize these differences.

Challenges for Literacy Pedagogy

As if there were not enough differences to contend with, different types of reading change the ways in which cognitive processes interact. Grabe minimizes the differences among types of reading not as different skills, but as matters of emphasis and elaboration.[77] However when it comes to how reading skills are taught, such differences in emphasis are not negligible. Grabe explains that reading for general comprehension evolves in L1 readers over considerable time. Reading seems an effortless activity for mature readers, an accomplishment due not so much to reading instruction per se, as to the countless hours devoted to "automatic word recognition, syntactic parsing, meaning formation and text-building comprehension processes, all of which take place under very intense time constraints."[78] In Grabe's estimation, fluency under time constraints is what makes reading difficult for L2 readers, because the L2 learner has often spent many

---

[75] Grabe, *Reading in a Second Language: Moving from Theory to Practice*, 99.

[76] Ibid., 106.

[77] Ibid., 13.

[78] Ibid., 9.

thousand fewer hours doing the activities that successfully contributed to automaticity in her first language. If beginning readers are asked to read predominantly that which is too advanced or too technical for their accumulated levels of word recognition and comprehension, the reading experience may quickly become discouraging and the student is less likely to read. In second language acquisition even more than first, the teacher must weigh the pros and cons of assigning fewer reading selections that are more complex in vocabulary and grammar, versus more reading selections of a less complex nature. If fluency and automaticity is the goal, the teacher will prioritize activities that give students more practice in the skills that lead to automaticity. This is not to say that L2 reading ought to proceed at the same rate as L1 reading. Patterns of decoding and comprehension development are necessarily different for L2 learners than for L1 because L2 learners automatically have a slower rate of word recognition than their L1 afforded them at the same point in the reading process.[79] But the learner's motivation to read is crucial to protect and cultivate, and a skilled teacher will carefully monitor how the assigned tasks promote or discourage the student's motivation to read.[80]

Furthermore, most models of reading acknowledge the importance of "component skills" as explanations for reading comprehension.[81] Acknowledgement of the infinite complexity afforded by the blend of all these factors, all of which can be sources of

---

[79] Ibid. 98.

[80] Of course, other factors such as age and setting affect motivation also.

[81] Ibid., 105. Grabe lists the following skills as essential for learning to read: word recognition, vocabulary knowledge, grammar knowledge discourse awareness, inferencing, comprehension monitoring, fluency, practice in extended reading, and motivation to read.

reading problems, may explain why many competing research results have led to irreconcilable cognitive reading models that still cannot account for all the available evidence that exists about the ways people read and why.[82] The picture of reading that emerges is a highly individual one, requiring skilled teachers to discern the roots of each individual's difficulties and to tailor guidance for overcoming them. Not surprisingly, reading fluency and automaticity, clearly the goals for first language instruction, are often ceded as goals in second language classrooms. Speaking from personal observation, some second language textbooks and teachers seem to be seeking the quickest route to enabling the reading of the complex language of academic research. Reading fluency in terms of vocabulary recognition, simultaneous comprehension, and even authentic pronunciation, necessarily entailing simpler structures in earlier stages of language acquisition, is traded for the ability to figure out complex content given a dictionary and enough time. But teachers do well to consider that reading approached thus may well remain an arduous task that people do only if forced. It is less likely to become the enjoyable, absorbing activity that marks mature readers and contributes to the larger development of the student's language ability. Thus, the goals of reading can determine how one is taught to read, the kind of material one is given to read, and for better or for worse, affect the amount of time a student spends practicing the skills that contribute to good reading.

In this regard, the second language teacher seems to face similar challenges to the music literacy teacher. Many music theorists seem to have come to the same conclusion as Emily Brink did:

> There are those who insist that a musician must follow a "natural" sequence in learning to sight sing before being considered a competent reader. Certainly given

[82] Ibid., 83.

> a curricular structure that begins music study in childhood, the natural way to musical competence would be to root music reading in singing. However, given the realities of the educational system and the paucity of a vocal music culture, at least in the United States, one cannot expect a reading knowledge based in sight singing of college freshman.[83]

A major tension for teachers of both language and music reading can be understood as a time pressure: a four year college degree has so much less time to accomplish what twelve years of general education accomplished. Interestingly, some accounts of reading development in L1 indicate that beginning readers' decoding skills finally catch up to their more advanced listening comprehension skills by grade four.[84] The difference between the two processes may therefore be more than mere time constraint. The difference in the cognitive development processes of children aged six to nine years and young adults aged eighteen to twenty-one years may on the other hand be dismissed as a difference in language learning aptitude at an older age. But this difference may also have to do with *how* we are taught language at an older age. Because capacity for complex thought is more developed in adults than in children, teachers may feel they must accommodate this complexity in order to keep students from feeling bored or patronized in language learning. If they accomplish this by giving students reading material of a complexity appropriate to their mental development but too weighty for their reading ability, the student may indeed end up more interested in the content once they finally discern it, but may learn to dislike reading itself. This same tension

---

[83] Emily Brink, "A Cognitive Approach to the Teaching of Aural Skills, 37.

[84] Grabe , *Reading in a Second Language,* 98. Incidently most students are nine years of age in the fourth grade, the same age music theorist Edwin E. Gordon suggests is the turning point for students to develop music reading skills with the ease of a first language. Edwin E. Gordon, *Learning Sequences in Music: Skills, Content, and Patterns,* (Chicago: GIA Publications, 1997), 2.

contributes to music reading instruction as it is currently approached. The ultimate challenge for both categories of teachers may be to cultivate a childlikeness in adult students that seeks to motivate reading largely through the thrill of reading. In order to accomplish that, increasing fluency must be felt by the student. That is, they must delight in their own improvement, which they will only do if they embrace and nurture fluency and accuracy as the primary goal at first. By the same token, reading pedagogy must accept that fluency in reading is best served by appropriately difficult material, and to attempt to force that process to accelerate too fast is to risk losing readers.[85]

Correlations between Musical and Verbal Literacy

Having established some evidence that language and music correlate in specific ways despite their irreconcilable differences, there are specifically four ways in which the language reading process and the music reading process resemble one another. The first has to do with phonology, or the relationship of sounds to symbols; the second has to do with the necessarily temporal dimension of the unfolding of both languages in real time; the third compares learner processes of relating to the orthographic symbols, processes which have both indirect and direct components; and finally, similar implications can be drawn for curriculum development and pedagogical process in both languages.

Sound

Literacy teachers do well to remember that language is first a sound medium. Skill in reading words comes best through verbalization because that is the part of

[85] This pertains to the debate in music literacy pedagogy of which solmization systems are best used, or if solmization should just be skipped altogether given that it is not useful in singing the music of Hindemith or Schoenberg. The assumptions in such a suggestion are ignoring both basic skill acquisition principles, and the fact that so-called atonal music developed out of tonal music, and thus has a seminal relationship to it.

language that is familiar. Even in cognitive science, verbal protocol studies are still a main documentary device for reading skills. The more mental capacity is required for a reader to decode the sounds of the words, the less capacity is left for comprehension.[86] Correct rendering of the phonemes is not communication, but it is the bedrock on which communication rests. This is why poor phoneme awareness in early ages is an indicator of poor reading skills later. Weak readers are not weak because they fail to engage higher level processing; they are weak because they are unable to carry out lower level processing easily and fluently, leaving insufficient cognitive resources for comprehension.[87] Prosody, the patterns and accentuations of sounds in verbal language, has been overlooked in language research, linguistics, and psycholinguistics, but has recently received more attention.[88] Prosody cannot be taught or assessed without vocalization of language, and has a stronger connection to comprehension and fluency than has traditionally been granted.

Skill in reading music also comes best through vocalizing. Kodály called singing without any instrument "the true and profound school of musical abilities," and many music literacy specialists who have followed after him maintain that singing is the most

---

[86] Michael Pressley, "The Cognitive Science of Reading," *Contemporary Educational Psychology* 22/2 (1997): 252, 254-255; Grabe, *Reading in a Second Language*, 24. Both authors cite various models of reading that consider this.

[87] Pressley, "The Cognitive Science of Reading," 253; Grabe, *Reading in a Second Language,* 105.

[88] Besson and Friederici, "Language and Music," 4.

logical and accessible way to teach musicianship.[89] Unfortunately singing is not always as familiar as it should be to instrumentalists, although plenty of band conductors and instrumental applied teachers utilize singing in their teaching. In instrumentalists for whom the ear is not required for the creation of pitch, a strange artificial music making can develop which is purely motor skill, no artistic or cognitive processing at all: the student moves digits to activate correct pitches at the correct times, but the sounds do not emanate from any internal sense of intention, a flaw which is made obvious in some cases when the student is asked to sing the theme instead of relying on their instrument to produce the sounds. It is the greatest irony, on the other hand, that singers are typically such poor aural musicians, given that they are so comfortable in this natural way of producing musical sound. The fault in both musicians is the same: they have not been taught to internalize and comprehend the sounds they make. If this is not addressed the resultant depth in communication amounts to teaching a parrot to talk.

Temporal unfolding

Not only are both words and music perceived as phonological entities within frequency spectra; they are also both organized temporally, unfolding in time.[90] They are both sequential, generating a strong sense of expectancy in their separate contexts, according to their specific conventions.[91] The psychological experience of both systems is also similar in important ways. As Aniruddh Patel points out, structural ambiguity is

---

[89] Micheál Houlahan and Philip Tacka, "Sound Thinking: A Suggested Sequence for Teaching Musical Elements Based on a Philosophy of Zoltan Kodály for a College Music Course," *Journal of Music Theory Pedagogy* 4/1 (1990): 86-87.

[90] McMullen and Saffran, "Music and Language, 289-290.

[91] Besson and Friederici, "Language and Music," 4-5.

possible in both: items absorb context-dependent psychological functions that can only be understood in relation to one another (such as subject and predicate, tonic and dominant); and both depend on memory to incorporate past events with incoming events such that they are perceived as a unified whole.[92] To this end, listening (in time) must be practiced. Conversation is a kind of listening, where the appropriate response to input is not merely repeating what was heard, but responding with an appropriate utterance. On this basis, some music teachers maintain that an element of improvisation is an aid to music literacy, whereby one learns to respond to music with music. But in second language acquisition, even conversation requires simpler and slower input so as to not overwhelm the listener. Thus second language teachers will often teach listening in three stages. In the first stage required vocabulary and background knowledge is pre-activated to prepare for listening. Then comes the actual listening, during which students seek to comprehend what is heard. And finally, the listening task is extended and developed with questions and reflection.[93] Teachers of aural skills practice similar strategies for teaching musical listening, priming listeners with tonal or rhythmic patterns that will occur in a dictation for example, listening to the musical excerpt, and evaluating the content and listening process afterward.

In both cases teachers must use both "off-line" and "on-line" techniques to evaluate perception. Off-line processes operate consciously under no time constraint after listening has taken place. On-line processes unfold as the language event is in progress, and thus provide a different assessment from off-line processes, what Swinney and Love

---

[92] Patel, "Syntactic Processing in Language and Music," 28-29.

[93] Cook, *Second Language Learning and Language Teaching*, 129.

call "fine-grain" models of language perception.[94] In terms of automaticization, on-line assessments reveal more useful information; in terms of analytical and declarative knowledge, off-line processes are necessary. Thus listening is a complex process that properly begins before the aural event, unfolds in real time during the event, and continues after the event is over. This is equally true for verbal and musical listening. Because of its self-referential nature, in music more than in language the perception of an aural event will tend to be more individual in nature if the teacher does not prepare the experience with specific listening guidelines. Each perception, even the most idiosyncratic associative experience of music is legitimate, but not all perceptions will help to contribute to literacy. Guided listening in literacy development has an enormous role in helping students to connect the aural with its written symbols.

Decoding symbols

The third area of resemblance between language and music learning concerns orthography, the recognition of the shapes and arrangements of the letters, groups of letters (words), and word groups (phrases and sentences). The term "sight reading" is applied to the early stages of reading acquisition, whereby high frequency words are drilled so thoroughly that the reader recognizes them automatically.[95] While other aspects of language awareness are necessary for reading to occur, automatic word recognition is considered one of the most important processes to make it possible for a speaker of the language to activate comprehension through graphic symbols as competently as they do

---

[94] David Swinney and Tracy Love, "The Processing of Discontinuous Dependencies in Language and Music," *Music Perception* 16/1 (Fall 1998): 68.

[95] Grabe, *Reading in a Second Language*, 24.

when they hear spoken language.[96] This is a comparable process to teaching someone who sings or plays an instrument "by ear" how to read the written language of music. Musicians retain the use of the term "sight reading" to refer to first time encounters with a musical score, even among literate musicians. In language reading, the term "sight" is dropped and fluent readers are simply said to be reading, a skill in which the recognition of letters is not sufficient for word recognition. In fact, letters embedded in words—even in pseudo-words—have been shown to be recognized better in some studies than letters in isolation.[97] Having said this, letters are still considered by many reading specialists to be the basic perceptual unit of word recognition. But this issue of the context shaping the very process by which the smallest elements of the language are recognized is also pertinent to music reading. Individual notes have no meaning in music outside their tonal and rhythmic contexts, and are not in themselves what musicians read. Music reading involves the instantaneous recognition of patterns of pitch and rhythm, not pitches or note values in isolation. Indeed a fixation with pitch can be a hindrance to learning to read music, to the degree that it prevents the development of recognition of patterns of pitches and rhythms.

The ability to recognize words and phrases is acquired largely by two learner processes: practicing and inferencing. Practicing is thought to be an indirect strategy, because it prepares learners to "exploit learning experiences more effectively later." Inferencing on the other hand is considered a direct strategy, because the learning is more

---

[96] Ibid., 22.

[97] Philip B. Gough, "Word Recognition," in *Handbook for Reading Research*, ed. P. David Pearson (New York: Longman, 1984), 232-233.

context-specific, and the knowledge is less transferable to other situations.[98] Both are essential in reading development, but speaking from experience as both a student and a teacher, practicing is the more likely to be ignored. Language information is "fragile" and disappears, or at best remains merely a piece of information if it is not recalled and used repeatedly in various modes of rehearsal after being presented. Particularly in L2 contexts, repetition is essential in overcoming the highly practiced automaticity that the L1 has achieved.[99] For reading, comprehension and long-term linguistic development depend on "frequency of input, associative processing, and larger emerging patterns."[100] Peter Robinson outlines a similar learner process under the rubric of attention theory, whereby "noticing" can be defined to mean "detection plus rehearsal in short-term memory prior to encoding in long-term memory," at which time the skill has become automatic, and no longer requires conscious attention. His concern is the allocation of limited attentional resources to fulfill specific tasks, recognizing that the nature of rehearsal will vary according to whether the task demands data-driven (on-line) processing or conceptually-driven (off-line) processing.[101]

Engaging students in consistent long-term practice ought to be no less the primary instructional goal for music literacy instruction as it is for verbal literacy instruction. To use Robinson's caveat, the nature of the task determines the nature of the rehearsal.

---

[98] Skehan, "Individual Differences in Second Language Learning," 286.

[99] Grabe, *Reading in a Second Language*, 61.

[100] Ibid., 66.

[101] Peter Robinson, "Attention, memory, and the 'noticing' hypothesis," *Language Learning* 45/2 (1995): 296-297.

"Rather than learning rules, reading development is about the incremental associative learning gains that arise through massive exposure to print, the continual building of vocabulary knowledge and automatic word-recognition skills, and consistent practice in meaningful reading tasks that extend basic cognitive skills."[102] However, as Edwin Gordon notes, in music theory many teachers move too quickly to "the generalized, verbal level of inference learning."[103] Not only, as he points out, do they ask students to draw out the patterns of tonality and meter from unfamiliar pieces of music before these aspects are explored in familiar music. They also tend to rush the process, so that before students properly assimilate input through extended reading and experience in varied practice, they are inundated with more input. Overload results, not fluency. Music theory, as Gordon calls it, "the highest level of inference learning,"[104] is typically poorly balanced with the more indirect (on-line) learner process of reading practice, the very process that is best able to generalize musical knowledge to other musical instances.

Pedagogical concerns

The question should be asked in terms of curriculum development if the gains of heavy front-loading of theoretical input without proper time given to assimilate them in practice outweigh the losses in individual reading fluency. While this would seem to be the case given the current organization and administration of much music literacy pedagogy in higher education, it would be erroneous to assume that music theorists would agree such a trade-off is acceptable. What administrators of music programs and

---

[102] Grabe, *Reading in a Second Language*, 88.

[103] Edwin E. Gordon, *Learning Sequences in Music*, 56.

[104] Ibid.

teachers alike must recognize and act upon is that if a level of automaticity in reading fluency is not nurtured from the outset, such assimilation is disabled for some students, who tend to abandon learning to read altogether. Gordon recommends not altering musical skills or music content to adapt to individual differences in students of music literacy, but merely altering the difficulty.[105] The anticipation of what will be difficult for students is not a skill music theorists are equipped to decide by themselves. Effective curriculum development requires the concerted efforts of teachers from across the musical spectrum, so that the curriculum accurately "indicates the range of supporting reading skills that should be taught explicitly, practiced regularly, and recycled consistently."[106] Grabe offers a fascinating commentary on L2 reading development:

> Most students take a dim view of becoming good, fluent L2 readers. Students know that reading development is hard work and they need effective motivational support from teachers and the curriculum itself. Teachers commonly think that they do not have a major role to play in student motivation for reading. This view could not be further from the truth. Both L1 and L2 motivation research argue strongly that motivation will be significantly affected by what happens regularly in classrooms.[107]

Similarly many students see learning to read music fluently as an impossible task. Rather than seeing themselves as located somewhere on a spectrum of zero music reading proficiency to highly proficient music readers and upwardly mobile, students seem more likely to classify the world into concrete categories of those who can read music, and

---

[105] Ibid., 1.

[106] Grabe, *Reading in a Second Language*, 19.

[107] Ibid., 191.

those who cannot.[108] If they have locked themselves in the negative category, and they do not encounter teachers that are able to help them, mustering motivation to read will be impossible. Thus, in curriculum development, all teachers, music theory teachers and performance teachers alike, need to be concerned not only with method and content: why we teach what and in what sequence. They must increase their awareness of difficulties text presents to students, whether insufficient background information, cognitive deficits caused by lack of processing facility, or slowness due to lack of automaticity.[109] They also need to concern themselves with the technique of teaching, an enormous aspect of which involves understanding how motivation is developed or discouraged in students and what role it plays in their developments as musicians.

Paradigms of Motivation

Motivation entered seriously into discussions of second language learning in the early 1970s, especially with Robert Gardner's *Social Psychology and Second Language Learning: The Role of Attitudes and Motivation*, published in the mid-1980s. While motivation is a general factor that influences human behavior in many respects, in second language acquisition literature it falls under the category of individual differences, where teachers and theorists alike seek to explain success differentials between students of otherwise comparable intelligence. Specifically, four individual differences in language acquisition have been shown to correlate with degrees of success: language aptitude,

---

[108] This assessment is only a hunch. The author's suspicion is that if such negative attitudes exist in verbal literacy, which enjoys a much stronger commitment in goals of general education, such attitudes would be even more prevalent in musical literacy. An interdisciplinary study gathering data regarding how students view their own literacy abilities in both music and language could be most enlightening, but does not exist to the author's knowledge.

[109] Cook, *Second Language Learning and Language Teaching*, 124.

motivation, learner strategies, and learner styles. Motivation can be understood to be a significant factor within language aptitude, which refers to the amount of time needed by an individual to learn material or develop language skill. Other such factors include intelligence quotient, personality, and age.[110] In fact, Dörnyei asserts, "My personal experience is that 99% of language learners who really want to learn a language (i.e. who are really motivated) will be able to master a reasonable working knowledge of it as a minimum, regardless of their language aptitude."[111]

For a long time motivation was understood in Gardener's terms as arising from one of two sources. It was either instrumental, in that it furthered a career goal, or it was integrative, that is, motivated by a desire to fully participate in the valued culture of the people of the second language. Of the two, integrative motivation was shown to be more effective, because it was more internalized and less reliant on external constraints and rewards.[112] This theory had special relevance in Gardener's native Canada, where

---

[110] Skehan, "Individual Differences in Second Language Learning," 276-77; see also Robert C. Gardener and Peter D. MacIntyre, "A Student's Contributions to Second Language Learning, Part I: Cognitive Variables," *Language Teaching* 25 (1992): 214-215.

[111] Zoltán Dörnyei, *Motivational Strategies in the Language Classroom* (New York: Cambridge University Press, 2001), 2.

[112] Robert C. Gardner, *Social Psychology and Second Language Learning: The Role of Attitudes and Motivation* (London: Arnold, 1985); see also Cook, *Second Language Learning and Language Teaching*, 136-137 and Skehan, "Individual Differences in Second Language Learning," 282 for summaries of Gardner's position. It is not insignificant that Gardner's theory was developed in Canada, where language has always been a contentious political issue. This is evidenced by the fact that although there are two official languages in which everything is published, Québec is the only Francophone province. Pockets of French-speaking people exist in many provinces, and French-immersion schools have become increasingly popular throughout the country, but there is still one political party whose sole platform is Québec separation from the rest of Canada. The roots of the conflict between French- and English-speaking people are long and

language identity is a thorny issue to say the least, but it also resonated with immigrant second language learning communities where the need to acculturate was paramount to survival. Naturally, negative attitudes toward the culture and people of the second language do not provide strong motivation to excel. While these kinds of situations have some residual relevance in discussions of motivation to learn a second language, with the trend toward globalization issues of integrative motivation have changed. Integrative motivation no longer fits many language learners today, where English is becoming a universal "basic skill" along with reading, writing, and arithmetic. Language acquisition analysts understand a shift to be occurring in L2 motivation away from individual outward stances toward a second culture, toward individual inner notions of self and identity.[113] Language teachers continue to see motivation factoring significantly in language acquisition, but its significance has less to do with individual determination to acculturate and more to do with the formation of one's individual self concept. The deeper internal motivation that Gardner theorized has not disappeared, but has been developed in a different direction. The recognition remains that learning a second language seems to forge a closer link to an individual's core identity than for many other

---

complicated, extending historically to the establishment of the country, and it is a monument to the democratic process that the tensions, while significant, have never degenerated into civil war. However, attitudes between French- and English-speaking Canadians have been less than cordial, and the very study of French in Canada has been unusually fraught with political baggage. For example, as a teenager contemplating high school options in western Canada, the author was discouraged from taking French unless planning a career in government or politics, the only place it was deemed necessary.

[113] Ema Ushioda and Zoltán Dörnyei, "Motivation, Language Identities, and the L2 Self: A Theoretical Overview," in *Motivation, Language Identity and the L2 Self*, ed. Zoltán Dörnyei and Ema Ushioda (Buffalo, NY: Multilingual Matters, 2009), 1-2.

academic subjects, and the kind of hard work that must be sustained over many years in order to accomplish native-like fluency requires powerful motivation.

"Ideal selves"

In the last several years, Zoltán Dörnyei among others (Ema Ushioda, Kimberly Noels, Rebecca Oxford, and Peter MacIntyre to name only a few) has sought to combine developments in second language learning with developments in mainstream psychology, and has reframed motivation for second language acquisition in terms of the integration of a learner's "self-concept" into their current behavior, not so much integration of themselves into an "other" community. This motivational system, generally understood as personality traits and their behavioral outworking, does not focus on the individual's present self-concept, but rather on what they might become in the future, what they would like to become, and on the negative side, what they are afraid of becoming. If a learner's self-concept includes a strong vision of fluency in a second language, that person is more likely to become proficient in the language than one who lacks that self-concept.[114] Scholars engaged in this type of motivation theorizing have gone to great pains to distinguish between mere "long-term goals" and the individual learner's establishment of an "ideal self" or "possible self," which carries greater power than goals per se, not only to accurately recognize but also to actualize their own latent potential. The key difference between "long-range goals" and "possible selves" seems to be the role of the imagination, beyond what logical, intellectual arguments could accomplish. A strong imagination engages in mental processes dedicated to fostering the "possible self,"

---

[114] Zoltán Dörnyei, "The L2 Motivational System," in *Motivation, Language Identity, and the L2 Self*, ed. Zoltán Dörnyei and Ema Ushioda (Buffalo, NY: Multilingual Matters, 2009), 9-11, 25-26.

and thus allows learners to approximate what people actually experience psychologically when they engage in motivated behavior. The sooner learners taste the psychological rewards of realizing potential, the more likely they are to continue to act in ways that will enable them to fulfill their ideal self concepts. This is accomplished through specific imagery that works to promote what the student desires, and to prevent what they dread. This kind of mental work has a popular corollary in sports psychology, a standard aspect of athletic training.[115] In fact, many performing artists use this kind of work to overcome performance anxiety and enhance performing skills. But learning to read is never the focus of such mental efforts. This implies that reading does not require the intensity of motivation that performing does. Motivation cultivated for developing performance skill does not naturally translate into reading skill. Motivation is "domain specific" and reading motivation must be developed in its own right.[116] In the absence of strong motivation, it is not surprising then that singers behave as if learning to read music is optional.

"Possible selves" do not amount to a naïve belief that all can succeed equally well. Educators and researchers alike recognize that learners differ in their abilities to generate sufficiently vivid imaginations of their future selves. These abilities are not completely self-determined, but are strongly influenced by peers and parents, and in some cases a learner discovers a conflict between an ideal self and the low-achieving expectations of their primary circle of influence. Teachers have an even more important role to play in such instances, both in tailoring motivational strategies to individual

---

[115] Ibid., 12, 15-17, 25.

[116] Grabe, *Reading in a Second Language,* 182.

student's needs and in helping students to understand lack of or loss of motivation, which is variable.[117] To be sure, some cautions are in order with respect to the construct of possible selves. As Peter MacIntyre, et al., have pointed out, "possible selves" are not measurable, nor ought they to be confused with the many other constructs of the enormous "self" literature on the shelves. Even more importantly, teachers must remember that self-concepts are not set in stone, but are likely to change with time and learners' maturation processes.[118] Particularly in academic contexts, where students are encountering so many formative influences and experiencing rites of passage into adulthood, motivation at best is a variable and multistage concept. However, this fact does not lessen the importance of the classroom experience, but rather heightens the responsibility of teachers to create environments that heighten student motivation wherever possible, and avoid discouraging motivation.[119]

While much more could be said about motivation theory, sufficient ground has been laid to consider its application to the language of music. The point for the purposes of music literacy education is two-fold. First, the fact is that motivation has not been theorized with respect to the acquisition of musical language to nearly the same extent as

---

[117] Dörnyei, "The L2 Motivational System," 19-20; see also Peter MacIntyre, "Toward the Development of a Scale to Assess Possible Selves as a Source of Language Learning Motivation," in *Motivation, Language Identity, and the L2 Self*, ed. Zoltán Dörnyei and Ema Ushioda (Buffalo, NY: Multilingual Matters, 2009), 209.

[118] Peter MacIntyre et al, "The Baby, the Bathwater, and the Future of Language Learning Motivation Research," *Motivation, Language Identity, and the L2 Self*, ed. Zoltán Dörnyei and Ema Ushioda (Buffalo, NY: Multilingual Matters, 2009), 58.

[119] Grabe, *Reading in a Second Language*, 188.

linguistic language.[120] Second, the theoretical shift of integrative motivation away from language speaking communities and acculturation issues to issues of self-identity opens the door for considering how motivation may be seen to function in the acquisition of music literacy. If learning to read music is crucial for becoming an effective professional musician, there are plenty of reasons to consider that weak motivation to learn to read music must be directly countered by teachers of music literacy, and that the establishment of strong internal motivation in individual music learners must be nurtured, protected, and understood as a major factor in music literacy acquisition, no less than it is in second language acquisition. To borrow Dörnyei's summation, an effective Musical Literacy Motivational System has three parts.[121] The first two points will be developed in chapter three from the standpoint of applied voice lessons and musical literacy; the third will be carried into chapter two where the central question pertains to how learning experiences, particularly music literacy learning experiences, could be made more effective in college music cultures.

1. Ideal musically literate selves must be formed, which includes internal and intrinsic instrumental motives for singers to learn to read, as well as the formation of negative selves they wish to avoid.

2. "Ought-to" musically literate selves must be formed, including external and extrinsic instrumental motives, guiding them positively toward literacy and negatively away from illiteracy.

---

[120] Edwin E. Gordon and Kenneth H. Phillips are two music educators who have emphasized these ideas. This problem will be developed further in chapter two.

[121] Ibid., 29.

3. Positive music literacy learning experiences must be achieved, comprised of skilled and dedicated teachers, well-designed curriculum, positive interactions with learner cohorts, and ongoing experiences of success.

Teaching and cultivating motivation

At this point, a reminder is in order that a central concern of this paper is not only helping singers sing better, but doing so primarily by helping them read better. In order to do that, they must desire to read better, and some of them will need an introductory lesson in what is possible in terms of music reading. They may have never had fluent vocal reading modeled to them. If the music they have learned to date in choral situations and in voice lessons was primarily learned by rote—the all too familiar "pounding out the notes on the piano"—they may assume that the only way they can learn to read better is to learn to play the piano. Nothing could be further from the truth, but first they must understand what reading is. Strangely enough, a description of what good language readers do provides an excellent analogy to help clarify what singers will need to learn to be good readers. Michael Pressley sets forth seven activities that good readers engage in, making the profound observation: "With less skilled readers, there is less activity."[122] He feels strongly that reading should be studied as a function of reader goals, a basic outlook that would in itself radically change the way music literacy pedagogy is currently approached. This is not to say that students know what they need to learn, because they

---

[122] Pressley, "The Cognitive Science of Reading," 249-250. He lists seven activities good readers do: 1. They overview a text before reading; 2. They exercise differential attention to the information they encounter; 3. They draw on prior knowledge; 4. They seek to figure out new words encountered in the text; 5. They sometimes make notes to themselves to help them remember salient points; 6. They exercise interpretive action throughout; 7. They reread, review, and reflect on what they have read when they are finished.

often do not. As Vivian Cook writes, "What interests the students is not necessarily in the students' interests."[123] But for a teacher not to consider, for example, what goals of reading would best benefit students in their actual musical lives, is to discount the role that their interest in the material plays in the construction and use of effective learning strategies, their level of attention, their time dedicated to achieving competence, and their comprehension.[124] One cannot assist students' formation of their ideal musical selves if their goals are not considered to be paramount. In some cases, what students consider to be possible needs to expand, but they are more likely to embrace new ways of learning if they can see how the end result will bring them closer to goals they are enthusiastic about. Without this, the temptation to stay with rote learning of music will be very strong.

While not all of the points Pressley lists are transferable to music reading, the first three are particularly important for singers learning to read. The first two, to look over the entire text before beginning, and to prioritize their focus on the information they encounter, are so basic as to be overlooked. They will be discussed in the third chapter, as these are key elements of singers' reading faced routinely by private voice teachers and choral directors, not as much by aural skills and musicianship instructors. However, the third characteristic of good readers Pressley mentions is essential for teachers of music literacy: good readers draw on prior knowledge. A good literacy teacher must not only understand what prior knowledge each student has. In some cases they must begin by teaching them that approaching each new piece of music does not amount to starting from scratch to learn to read, any more than we start from scratch to learn to read English with

---

[123] Cook, *Second Language Learning and Language Teaching*, 136.

[124] Allen Wigfield, "Reading Motivation: A Domain Specific Approach to Motivation," *Educational Psychologist* 3/2 (1997): 63.

each new piece of writing we encounter. Singers who do not read, but learn each piece of music by rote, are more likely to approach each new piece as a completely new experience, and not connect the musical events encountered in one piece with the musical events encountered in another. Simply understanding that the language of music is made up of relatively few elements that combine into predictable patterns is a huge step toward musical literacy. Other factors can then follow: a well-designed, incremental reading regimen that introduces new elements gradually; strong encouragement of consistent practice for small amounts of time every day; and personal guidance by skillful and dedicated teachers for individuals' unique obstacles.

Both intrinsic and extrinsic motivations are necessary components of a motivational system that leads to literacy. Cognitive developments are enabled by individuals' choices of activity, their persistence in those activities, and how much effort they expend.[125] Extrinsic motivators should always be focused on getting students involved in activities that are likely to produce within them intrinsic motivation to continue. The teacher's main job is to provide external incentives to get students to engage in such activities. For example, getting a good grade, while a lesser motivator than the long-term goal of being able to function as an effective music professional, still may be effective at causing students to engage in activities that will enable them to achieve their long-term goals for their own reasons. Ideally, once they get involved and experience success, intrinsic motivation takes over and the extrinsic motivator is no longer needed. As Allen Wigfield and William Grabe both point out, one aspect of intrinsic motivation is becoming completely engrossed in an activity. Both cite

---

[125] Grabe, *Reading in a Second Language*, 175.

Csikszentmihalyi who developed an extensive theory of "flow experience," loosely defined as "losing track of time and self-awareness." Besides pleasure, "flow" is associated with impulse or drive to learn, curiosity, and intensity of personal involvement. One of the primary activities people report experiencing this is in reading.[126]

Enemies of reading classrooms

The cultivation of a positive learning environment is essential, where each student knows they have the potential to be an independent music reader and can receive guidance and encouragement for realizing that potential. Three enemies habitually lurk in musicianship and aural skills classrooms that teachers must intentionally counter in order to see students succeed. A lack of motivation is the primary obstacle. For reading music no less than reading words, students must be sufficiently motivated to choose to develop their reading skills and go to the required lengths to overcome their limitations. Students cannot become skilled readers unless they read frequently, and motivation is critical for them to prioritize reading development.[127] This needs to be understood at an institutional level. When aural skills classes require an enormous amount of students' time, but are not accorded appropriate credit hours, motivation is discouraged. When the teaching of aural skills classes is assigned to inexperienced graduate students who are only doing it because it is paying for their graduate degree, motivation is discouraged, and the take-home message is that teaching people to read music does not require skill or experience. When learning to read is complicated unduly by unnecessary analytical paraphernalia as

---

[126] Wigfield, "Reading Motivation," 61; Grabe, *Reading in a Second Language,* 180-181.

[127] Grabe, *Reading in a Second Language,* 192.

sometimes occurs when musicianship class is treated as a laboratory for music theory, motivation is discouraged. In order to generate individuals that are motivated to learn to read a language, the desire to achieve the goal of literacy must be viewed with a favorable attitude and connected with willingness to expend the appropriate effort to accomplish the goal.[128] These are all curricular concerns that must be addressed at a level above the classroom, and will enter the discussion in the next chapter.

But poor motivation can also be the result of two other factors within the classroom: fear and irrelevance.[129] Second language acquisition theorists define language anxiety as "apprehension experienced when a situation requires the use of a second language with which the individual is not fully proficient. This anxiety can be seen in situations where they are expected to communicate, either where social evaluations take place, or in examination situations. This anxiety is considered a learned response associated with negative language experiences, often a combination of an individual's strong desire to acculturate, and simultaneously their fear of losing one's native cultural identity.[130] In music this is slightly different issue, although the social evaluation and examination aspects pertain. Students often approach musicianship classes afraid that certain musical ineptitudes will be exposed. Particularly for adolescents, where peer behavior is the strongest regulator of individual behavior, the atmosphere cultivated in

---

[128] Gardner, *Social Psychology and Second Language Learning,* 11.

[129] Kate Covington, "An Alternate Approach to Aural Training," *Journal of Music Theory Pedagogy* 6 (1992): 5.

[130] Robert C. Gardner and Peter MacIntyre, "A student's contributions to second Language Learning, Part II: Affective Variables," *Language Teaching* 26 (1993): 5-7.

the classroom makes or breaks the process.[131] It takes a skilled teacher to put students at ease with each other and cultivate an atmosphere of safety and trust. Singing, while easy, natural, and fun for some students, is difficult and intimidating for others. Singing in public is for many an even greater fear than speaking in public, and therefore a playful atmosphere that encourages participation is essential if students are to overcome obstacles of fear. Interestingly in second language teaching, ability grouping, that is, the grouping of people with similar weaknesses and limitations into one class has been shown to be one practice that decreases intrinsic motivation. Similarly, grouping across abilities has been shown to increase intrinsic motivation, making students less focused on grades and rewards and more focused on curiosity and learning.[132]

If students fail to understand how what they are learning in music theory and aural skills classes help them accomplish the musical endeavors of the rest of their lives, their motivation to invest themselves in the complex and time-consuming work of learning to read will be insufficient for success. The teacher's hardest job is not motivating students, but creating the conditions within which people will motivate themselves.[133] Literacy teachers are doomed to fail to accomplish this when they disregard the reading skills students need to perform music intelligently. Even if students overcome negative beliefs

---

[131] Jane Elizabeth Pizzolato, "Achieving College Student Possible Selves: Navigating the Space between Commitment and the Achievement of Long-term Identity Goals," *Cultural Diversity And Ethnic Minority Psychology* 12/1 (2006): 59.

[132] Wigfield, "Reading Motivation," 66.

[133] Ema Ushioda, "Language Learning at University: Exploring the Role of Motivational Thinking," in *Motivation and Second Language Acquisition*, ed. Zoltán Dörnyei and Richard Schmidt (Honolulu, HI: Second Language Teaching and Curriculum Center, 2001), 122.

about their potential, overcome fear, and discover an internal desire to read, in order to develop fluency they need strategies by which to develop these skills. From the perspective of language learning, the role of frequency of input has recently been reinstated as an all-pervasive factor in success.[134] This pertains not only to language acquisition, but specifically to reading.

> It is extraordinary that extensive reading is still treated as a fringe issue in L2 reading instruction. There is now considerable evidence from many sources to demonstrate that reading extensively, when done consistently over a long period of time, leads to better reading comprehension as well as improved abilities in several other language areas.[135]

The logic pertains to music reading just as much as to linguistic reading, and frequency of reading is often what music literacy courses fail to emphasize. Fluency is a pedagogical goal that would translate well into the rest of a musician's life, regardless of which direction it took. Music theorists may well underestimate what fluency could accomplish in enabling students to understand theoretical constructs. As a specialist in reading disabilities such as dyslexia attests, "fluency is what binds a reader to the text. If a child cannot effortlessly decode a critical mass of words on the page, he cannot engage the text."[136] Arguments against oral reading practices in L2 classrooms because students may experience reading and/or pronunciation difficulties, sound unfortunately similar to those who argue that oral sight singing is not the best way for musicians to learn to read. But as Grabe points out, these arguments "in the absence of research, may indicate the limited state-of-the-art ESL theorizing on reading instruction rather than any evidence

---

[134] Grabe, *Reading in a Second Language*, 62.

[135] Ibid., 328.

[136] Ibid., 304.

that opposes oral reading practice."[137] The fact is, vocalizing is the primary method to assess what cognitive skills are developing in literacy, and students are only able to learn to read by reading, and by doing it frequently. This is true for verbal language and is no less true for music. So now the question must be addressed why general college musicianship classes often do not meet the needs of singers for learning to read fluently, and how this situation could be improved.

[137] Ibid., 309.

CHAPTER TWO: MUSIC READING: THEORY OR PRACTICE?

In the early 1990s, the *Journal of Music Theory Pedagogy* published an extended debate spanning several issues about the effectiveness of the various solmization systems in use today. The authors' attributions of superiority not surprisingly stemmed from the different pedagogical goals upheld by their respective systems. This was not a deeply hidden agenda. The representative of one side of the debate forthrightly iterated and reiterated that theorists' goals of ear-training are to nurture analytical skills, not performance skills. "The fundamental purpose of ear-training is not to produce readers …but to train the mind to hear music completely." The more insidious nature of his bias however, followed: "There are those within every department who would content themselves with an ear-training strategy intended only to produce facile readers."[138] The unmistakable implication of his comment is that mere reading is a low or modest goal that pales in comparison to the ambitious and more valuable goal of analysis. Music reading is pitted against music analysis. This is a surprising attitude. It may well stem from curriculum compromises driven by the time crunch music educators feel when faced with a high percentage of illiteracy entering a short four-year degree program. However, to think that students can learn to read music *en route* to doing musical analysis is akin to a first-grade teacher teaching children to read as they focus primarily on diagramming complex sentences. There is good reason why this is not the practice. Furthermore, no one believes a first grade teacher has failed if they have merely taught their students to read. In both linguistic and musical languages, teaching students to read puts them on firm footing for the rest of their education, and without the skill of literacy they are

---

[138] Timothy A. Smith, "A Comparison of Pedagogical Resources in Solmization Systems," *Journal of Music Theory Pedagogy* 5 (1991): 2, 21.

severely handicapped. So why would "facile reading" be considered an ignoble goal by any music educator?

History of Music Reading Issues

The history of music literacy brings this question into still sharper relief. There are two angles from which to look at the history of musical literacy. The first is the history of written notation itself; the second is the history of teaching people to read written notation. Vocal music formed the core of the earliest notational practice.[139] It was designed for liturgical singing, and relied on two parallel notations as vocal music still does: one for the words and the other above it containing musical information. At the beginning, notation simply focused on ordering the words and the pitches on which they were sung. Any differences in duration were text driven and traditions of timing were cultivated orally. It seems that literacy initially remained limited to clerics and much vocal music was still taught and learned by rote. Temporal representation in musical notation did not develop until the thirteenth century. The spacing of notes was an unreliable mode of representing duration, as notes were aligned with the calligraphic text as closely as possible, so timing information required altering note shapes or adding appendages to them. Eventually note durations came to be conceived in terms of multiples, and combinations of durational patterns were repeated, giving way to the concept of regular rhythmic grouping. The introduction of meter signs and bar lines helped to clarify the proportion and relative accentuation of rhythmic patterns. With the emergence of polyphony, vertical-spatial alignment of voices over several staves came to indicate temporal coincidence of voices. These aspects formed the essence of sight-

[139] Sloboda, *Exploring the Musical Mind*, 54-65. The following condensation of the history of music notation is drawn largely from Sloboda's summary.

reading skill in the early practice of notated music, and to a large extent they still do. As the notational system has been honed, the three main considerations that have shaped it have been increasingly specific content, spatial ordering of both tonal and temporal musical aspects, and its psychological effectiveness, i.e. is it clearly readable by a universal literate musical community?

As the specificity and virtuosity of the musical content has increased, influenced to such a great degree by developments in instrumental music, the reading challenge for singers has only grown. With respect to the psychological effectiveness of notation, linguistic text continues to be a central factor for singers. The best composers of vocal music are those who have mastered the setting of the text so that the prosody, that is, the phonological dimensions of the verbal language, is captured musically in a way that does not distort the natural rhythmic patterns of the language, but rather makes it singable and understandable. By the same token, editors of published music have had to make decisions about how to notate rhythmic proclamations of the text. One of the most misguided editorial decisions practiced until relatively recently involves the departure from instrumental practice of beaming eighth notes and sixteenth notes together according to the metric pulse. Instead, editors of vocal music allowed the syllables of the words to dictate the beaming of eighth notes and sixteenth notes, creating psychologically ineffective scores for singers, not only in the chaotic look of the page, but also creating confusion between slurs and beams in notational language.[140] What undoubtedly was

---

[140] A common example would be the two commonly used editions of Italian songs and arias, Schirmer's *Twenty-Four Italian Songs and Arias* from 1948 (first published in 1894) and Paton's *26 Italian Songs and Arias* published by Alfred in 1991. There are many improvements in Paton's more scholarly edition, but the "instrumental" style of beaming eighth notes and sixteenth notes make it preferable for teaching literacy.

intended to clarify the rhythmic specificity of the text, effectively confused singers and undoubtedly strengthened their bias toward the verbal text and away from reading the music. Modern editions have rectified this problem to a large extent, but meanwhile, earlier editions are still very much in use, which increase rather than decrease the difficulty of reading for singers.[141]

The history of the pedagogical practice of music literacy has varied from country to country. Unfortunately confusion has been rampant in pedagogical methodologies also. In America, pedagogical practices promoting musical literacy were brought from England and established through singing schools and shape note singing. However, eventually urban attitudes such as those established by Lowell Mason in Boston in the 1830s, discarded these parochial literacy practices in favor of a graded song series taught by rote. Mason and his followers "saw music in the school program as a means of relief from other studies, and as such did not promote music reading."[142] Not everyone accepted this as the best methodology for music education, and other courses were established that emphasized reading. Phillips notes, "Thus the debate began between methods which advocated immediate training in note reading and those which advocated a rote to note approach. In conflict also were the solmization systems in use."[143] Such non-conformity in musical instruction has continued to mark the halls of musical learning to the present day. The prevailing concept of music education that seems to consistently

---

[141] Sloboda, "The Psychology of Music Reading," 16; also Sloboda, *Exploring the Musical Mind*, 21.

[142] Phillips, "Sight Singing: Where Have We Been? Where Are We Going?" 13.

[143] Ibid.

win out preempts musical literacy in favor of "sheer musical enjoyment" and sees music as a tool for socialization. The rise of instrumental music after World War I affected the disuse of solmization syllables in favor of letter names and as a result, formal instruction in vocal music suffered neglect in general education. In the early 1960s, movements were initiated to reform music education, and music reading again became a goal of general music education, which now had a vision for the integration of analytical processes with reading and listening. But the reforms were not widely successful. As Phillips summarizes, "Better prepared music teachers were emerging from colleges and universities only to find the frustration of the thirty-minute per week music lesson."[144] The combination of an educational system that considers music optional rather than essential, and the continued lack of unity in musical reading systems, has produced the situation we have today, where music reading remains a non-outcome of most pre-college music education, particularly for singers. Instrumental programs cannot rely on rote teaching like choral programs can; nor do conflicting solmization systems affect them as much as they do singers. So instrumentalists typically learn to decode musical notation better than singers. This does not necessarily mean instrumentalists learn to audiate well, a skill essential to learning to sight-sing, but typically they are taught to interpret musical notation better.

This imbalance in music education that has emerged historically, particularly in vocal music, is difficult to understand, considering the extraordinary importance of musical literacy in the successful development of any musician. Music psychologists

---

[144] Ibid., 14-16.

have also seemed to have little interest in the subject of music reading.[145] An early music psychology publication from 1944 went so far as to accuse bad readers of laziness: "Anyone can read a piece at a bar a minute, and there's no other excuse than laziness for not acquiring speed."[146] Sloboda responds that laziness can only be attributed to someone who knows what should be done but does not do it. If students are not instructed in how to read, or given enough time to master it, they cannot rightly be blamed for failing to succeed. The lack of pedagogical focus on reading, both exemplified by and furthered by the confusion of different solmization systems, has produced a situation in which the academic musicians most invested in teaching literacy, and in fact those who theorize most about music as a language, no longer have performance skills in mind but analysis skills and theoretical verbal description. Analytical reading does not serve performers well if their basic reading fluency is weak. This is not to say analytical skills are unimportant or not valuable to the performer, any more than studying grammar is unimportant to reading verbal language. But understanding grammar does not help a child learn to read. How is it reasonable to talk about the manipulation of sounds if the person cannot hear what is being referred to? That would be like teaching a child the rules of grammar before they can speak. It is by speaking that children make clear that they understand the meaning of sounds. Once children have learned to talk well, decoding is the next skill they need to master. Once decoding skills have been mastered, studying grammar can proceed and naturally strengthens linguistic knowledge and enables it to sophisticate.

---

[145] Sloboda, *Exploring the Musical Mind*, 3.

[146] Ibid., 4.

Ample indications exist to at least consider that the same cognitive process and therefore a similar pedagogical process best enables music reading. No literature supports the notion that symbol should precede sound. As Don Ester, et al., make clear, two hundred years of music education has operated from the fundamental principle "sound before symbol." They list significant contributing educators Johann H. Pestalozzi, James Mursell, Jerome Bruner, Robert M. Gagné, and Edwin E. Gordon.[147] Edwin E. Gordon in fact coined the term "audiation" to refer to the ability of hearing music in one's imagination, whether from memory, in active musical creativity, or from a written score, i.e., "notational audiation."[148] The same process occurs when people learn to read words: they hear them in their minds and recognize them as words they know and understand. Just as children first learn to speak and then learn to read, Gordon among others has argued that sound must precede symbol in music learning also. In his view the major weakness with the way music reading is taught today is that oral and aural discrimination does not precede symbolic notational discrimination. Theory is taught before reading, or at best simultaneously with reading, complicating the cooperation of cognitive processes that have been proven to be most successful.[149] Kodály's approach, which Bruce More notes was unmistakably "populist" not "elitist," was successful because it started with sounds and hand signs, not written notation.[150] Perhaps the fact that the goal of universal

---

[147] Don P. Ester, John W. Scheib, and Kimberly J. Inks, "Takadimi: A Rhythm System for All Ages," *Music Educators Journal* (November 2006): 60-65.

[148] Gordon, *Learning Sequences in Music*, 10ff.

[149] Phillips, "Sight Singing: Where Have We Been? Where Are We Going?" 17.

[150] Bruce E. More, "Sight Singing and Ear Training at the University Level," *The Choral Journal* 25/7 (1985): 9-11.

musical literacy is not widely upheld today is the reason music educators disregard such analogies and fail to develop systems of music education and pedagogical practices that are founded on them. But the perspective on the viability of universal musical literacy has been lost. Warren Brodsky, et al., observes, "In earlier times when only a minority of the educated could read, literacy was looked upon with awe, when in fact, [now] reading words is certainly within the potential of almost everyone. One might look on notational audiation the same way."[151] Ironically, in 1957, Stanley Fletcher, a proponent of teaching musical literacy, pessimistically reflected that the educational guidepost of universal musical literacy was as "unattainable as reputable scientists spend[ing] serious research on the fairytale possibility of trips to the moon."[152]

Granted, the place for this kind of general music learning is not ideally the specialized environment of college music schools, but rather much earlier in general education. The point is not to lay blame on already overworked and underappreciated teachers in general education. Rather, the point is that if students are arriving in college music programs without having learned and mastered the decoding of written musical language, then transgressing the thoroughly documented, tried-and-true methodology of teaching sound before sign may well ensure these students never learn to read. Just because they are adults does not enable them to learn to read beginning with analyzing written notation. There is no documented reason to adopt a different method of literacy development for adults than that set forth by educators like Edwin Gordon for children:

---

[151] Warren Brodsky, Avishai Henik, Bat-Sheva Rubenstein and Moshe Zorman, "Auditory Imagery from Musical Notation in Expert Musicians," *Perception and Psychophysics* 65/4 (2003): 611.

[152] Fletcher, "Music-reading Reconsidered as a Code-learning Problem," 77.

first they learn to echo what they hear, they connect what they hear with a coherent system of syllables, and then they connect those syllable patterns to visual symbols. The fundamental goal of musical literacy is to enable the connection of sound to symbol, and the best means of arriving at that connection has been thoroughly established. The controversial question is not whether or not to reverse the order of sound and symbol. The controversial question is at what point symbols can be introduced without disrupting the aural processes being developed.

College Curricula and Literacy Pedagogy

Emerging from these observations, some questions regarding college music curriculum and pedagogy developments will now be addressed. This is not to diminish the question of whether musical literacy can and should be improved in K-12 education. Most certainly college programs and the discipline of music at large will thrive much better with a higher level of musical literacy entering college programs. Ideally, it would likely be in the best interests of music schools to standardize musical literacy entrance requirements across music departments, but it would be difficult to implement such a change without the support of general education. Even to implement a common standard of musical literacy across music departments may prove difficult to negotiate, as reading is usually tied to the technical fluency and prowess of the individual musician: what pianists are expected to know and do is different than what violinists or trombonists or singers are expected to know and do. This is not to say that the literacy standards of what the different musicians *should* know would not be agreed upon across departments, but that the reality does not currently reflect those standards and therefore implementing a comprehensive literacy standard may be resisted on the basis of its negative implications

for enrollment. Therefore, in lieu of what would at this point be a dubious undertaking of national standardization, the option is to reevaluate how musical literacy is taught at the college level, taking into consideration a general lack of adequate background, or at least considering the inconsistency of backgrounds among the students entering.[153]

The questions will be organized into three groups. Over all these questions hovers one big question: Is music reading *per se* actually taught? There is no question that music theory is taught, but theory is not reading. So the first group of questions asks what music theory is. What do music theorists do? And by what logic have music theorists become responsible for teaching musical literacy? The second group of questions looks specifically at some current approaches to teaching literacy, considering what skills are valued most highly, and what provision is made for the individual needs of students coming into a music program, (for example, singers with very little instrumental background). The attitudes conveyed cannot be ignored, and responsible pedagogues must own whether those attitudes enable and motivate students or alienate them. Finally, specific practices and biases in current music literacy education will be explored from the point of view of how they enable or disable musicians, particularly singers, from becoming literate. Critiques will include the prominence of the keyboard in literacy pedagogy, the confusing way solmization systems continue to be used, the lack of physicality in rhythmic literacy, the premature loading of written notation with analytical categories, the comparatively little time students spend reading music in their degree, and finally a lack of reinforcement at the level of applied vocal study. All these factors combine to unintentionally and yet effectively deter singers from learning to read.

---

[153] Scott, "Sight-singing in the College-Level Choral Program," 70.

What do music theorists do?

Ear-training and sight-singing has been claimed (or assigned) as a sub-discipline of music theory, and thus of music theory pedagogy for at least the last thirty years.[154] In American academic music training, music theorists typically oversee the sight-singing, ear-training, and musicianship courses. The connection between the two is not self-evident, however. The question of what music theorists do reveals a potentially uncomfortable fit between music theory and music literacy. Assigning the teaching of music literacy to music theorists has further complicated their musical identities, which apart from any concern for effective music literacy pedagogy, is already a hodge-podge. Whether adding music literacy pedagogy to the portfolio of the music theorist was a self-inflicted burden or an institutionally inflicted one is also an interesting question. But the question of what music theory is and what music theorists do needs to be addressed in order to understand by what logic they have become the primary music literacy instructors.

Of course, music theorists themselves do not entirely agree on what they do, and a cross-section of any university music theory department most often does not reveal a homogenous identity any more than reading an array of theorists' writings. To be fair, theorists' self-conscious understandings of their work have been evolving with the discipline itself.[155] As Thomas Christensen points out in his introductory chapter to *The Cambridge History of Western Music Theory*, (citing prominent German music historian

---

[154] Michael Rogers, "On the Teaching of Theory Teaching: A Selected Bibliography of Music Theory Pedagogy," *Indiana Theory Review* (Fall 1981): 61.

[155] Richmond Browne, "If we are All Theorists, why aren't we All Theorists? *College Music Society* 17/1 (Spring 1977): 136.

and scholar Carl Dahlhaus), given the dramatic shifts in subject matter that have occupied music theory over the centuries, music theory resists its own history.[156] One of the most interesting aspects to trace is music theory's fluctuating proximity to the practice of music making, at times thoroughly interwoven with musical performance practice, at other times so distant from it that no glimmer of performance practice enters the theoretical discussion at all.[157] As some current music theorists attempt to express their history and define their work, nostalgia emerges for the "glory days" when music theory was more purely speculative, i.e., thought to be a branch of mathematics and aimed primarily at metaphysical understanding, less defined by the practical concerns of music making. For example, "By the eighteenth century, music theory had become only a shell of its former glory."[158] Christensen notes that although the identity of music theory as a discipline, particularly in the twentieth century, has been attacked from without and anxiously debated from within, in his view and that of many contributors to the definitive history over which he is presiding, optimism abounds as theory seems to be returning to its "most traditional goal: to explore the universe of tonal *materia* in order to understand its boundless properties and potential."[159]

---

[156] Thomas Christensen, "Introduction," *The Cambridge History of Western Music Theory*, ed. Thomas Christensen, (New York: Cambridge University Press, 2002): 1.

[157] The emergence of different primary instruments of music-making, for example, from vocal music to keyboard music, actually seems an important aspect of music theory development. Such a history to this author's knowledge has not yet been written, and would yield some interesting historical analysis.

[158] Christensen, "Introduction," 8.

[159] Ibid., 12-13.

There are at least two dangers for the broader discipline of music in this outlook for music theory, but they are by no means inevitable and the problem lies not with a more speculative understanding of music theory *per se*. The first danger is double pronged. One prong is that if music theorists crave the speculative music theory tradition as their truest identity, and as a discipline seek increasingly to separate themselves from music performance, but they have been responsible for administering and structuring musical literacy courses in academia for the last thirty to forty years, someone else will need to take up the task of music literacy education. The second prong is the reciprocal: performers, whose primary concern is the practice of music, have left the practical concerns of musical literacy development to music theorists for so long, that they may be unable to effectively assume the teaching of musical literacy because literacy has been so neglected in their pedagogical practice. Such is certainly the danger for vocal pedagogy: music literacy is almost entirely absent from the most important vocal pedagogy literature of the last century. This situation will be addressed in more detail in the third chapter of this paper. But each side, theorists and performers, is equally at risk to diminish the concerns and goals of the other, and to function practically as if their respective work had no connection with the other whatsoever. This kind of rarified understanding of an academic discipline loses sight of how music functions in the world for real people, its students included, and its ability to positively contribute to the good of society is greatly diminished. Tenets of belief about the proper structure of one's discipline and the inadequacies of another with respect to one's own end up being clung to with a tenacity one otherwise observes in religious belief. Arguments take on an ideological dimension, and the quality of learning for students can be ignored as inconsequential.

The second danger is more insidious, and in fact poses an enormous challenge for music theory to actually return to its speculative roots. In the earliest speculative tradition of music theory, authors seem much more interested in and fascinated by the very human affinity for music than music theorists of today. Much modern music theory taught in college music programs focuses on analytical structures to the exclusion of unanswerable, i.e. speculative, questions of human affinity for music. As such, it is the reverse of the music theory of the ancients. To return to truly speculative music theory, i.e., that which speculates about realities beyond its understanding or ability to explain, it would seem that a radical shift will be required of a group of people for whom ultimate and comprehensive explanations of musical language and literature have become their *raison d'être*. The basic tenets of modern scientific inquiry pervading the academic enterprise in practically every discipline, as if the objective descriptions they produce engender exclusively definitive meanings, may need to be balanced with other modes of thought.

With respect to the issue of theorizing connections between verbal and musical language, theorists must come to terms with a dissonance of perceptive categories. Steven Brown engages this while speculating on the possible shared origins of verbal language and musical language, emphasizing how important it is to recognize the different modes of perception involved in musical language. Different camps of perceivers interact with the same acoustic stimuli using different modes of perception, and come to very different conclusions. The "absolutists," Brown explains, perceive music structurally according to an acoustic mode of perception, and emphasize its meaning primarily in emotive terms. The "referentialists" perceive music functionally, seeing it a vehicle for referential

meaning.[160] In both cases, Brown points out that the acoustic stimulus is the point of commonality but each mode of perception, necessarily theorized differently, must be understood as valid in its own right. With respect to the concerns of this paper, the author would wish to see developed how these modes of perception interact not only with acoustic stimuli, but what happens to the perceptions when verbal and musical languages assume a written mode of transmission. That is, what occurs when language becomes literature, requiring another set of perceptive skills, i.e. skills of literacy. It is one thing for music theorists to articulate such fine theoretical arguments as Brown has done in this essay, for example. It is another to translate those theoretical arguments into pedagogical practice in a musical tradition that is not only acoustic, but is also literate. This would seem to be the aim of theorists such as Jean-Jacques Nattiez, whose primary focus is indeed theorizing about the perception of the sign, but without much potential for application in literacy pedagogy strategies. Without the development of robust musical literacy skills, all such theorization about musical language is disabled.

Leo Treitler engages this dissonance of perception in a most provocative essay entitled "Being at a Loss for Words." He quotes the unknown author of the *Musica Enchiriadis*, dating from around 900 A.D., who admits, "As in other things that we discern only partly and dimly, this discipline [of music] does not at all have a full, comprehensible explanation in this life." The author then goes on to list all the structural and theoretical aspects that can be explained and concludes, "But in what way music has so great an affinity and union with our souls—for we know we are bound to it by a

[160] Brown, "The 'Musilanguage' Model of Musical Evolution," 271-272.

certain likeness…—we cannot express easily in words."[161] Treitler's point in highlighting the ineffable nature of music is to call into question the kind of language we use to describe it: "Does the interpretation and explanation of music call for a language of 'physics' or one of 'poetry'?" he asks.[162] He makes clear that the modern trend to reduce a discipline to its systematic verbal descriptions is true not only of music. Modern medicine, for example, a discipline thoroughly inscribed with precise and technical language, was not always so conceived. Treitler cites Heinrich von Staden, author of *Herophilus: The Art of Medicine in Early Alexandria*, who recognized in his research that this reversal was a perceived threat from the earliest medicine: "Galen, aware that one of the more treacherous obstacles faced by science is its own textuality—that science cannot do without language, but that language constantly threatens to ambush the scientist, Galen repeatedly turns to aspects of the relation of science to language in his medical writings." Treitler points out that for Galen, metaphorical descriptions of the physical world were not eschewed as less precise, but rather were understood as effective because they enabled more precise understanding, and reminds us that Plato argued the same.[163]

Treitler also invokes the historical understanding of verbal language, noting similar discrepancies between the way Augustine (354-430) spoke of language and the way his ideas have been interpreted. Augustine said of words, "The utmost value I can attribute to words is this: they bid us to look for things [that they stand for] but they do

---

[161] Leo Treitler, "Being at a Loss for Words," *Archiv für Musikwissenschaft* 64/4 (2007): 265-266.

[162] Ibid., 270.

[163] Ibid., 272.

not show them to us so that we may know them."[164] As Treitler points out, interpretations of Augustine's position on language have evolved substantially over time, sometimes within the mind of a single philosopher. Wittgenstein, for example, initially interpreted Augustine's statement as elevating the importance of naming things, which in his own theory of language gave a verbal description the concrete and unquestionable status of "a picture." But Wittgenstein eventually moved away from this view of language, conceiving words rather as creative activity. "Meaning," Wittgenstein later explained, "is determined by use in life." Eventually he came to believe that one-to-one equivalents between words and their fixed descriptions were less to be trusted than their very use. Treitler summarizes Wittgenstein's position by way of providing a segue to its application to the discipline of music: "Understanding language is similarly not a matter of following linguistic rules as though they were logic machines that churn out applications independently of us; it is an ability to act creatively in response to language, to create meaning in exchanges that Wittgenstein called 'language games.'"[165] The de-emphasizing of language's referential meaning, elevating rather its metaphorical qualities, provides the foundation Treitler needs to challenge the status given to verbal theoretical descriptions of music. His ultimate concern is not merely that they can misrepresent music's truest identity, but that a strict focus on such analysis can be a deterrent to actual recognition.[166]

---

[164] Ibid. 266.

[165] Ibid., 274-275.

[166] Ibid., 280-281.

Treitler is not alone in his suspicion of verbal description as having greater worth than more practically inscribed expressions of musical meaning. The late Jonathan Kramer, and more recently, Martin Boykan, both composers and music theorists, have expressed similar concerns with the way that music theory has evolved in the twentieth century. Kramer admitted that he wrote his book *The Time of Music: New Meanings, New Temporalities, New Listening Strategies* out of his concern that time, which in his view is the primary shaper of musical meaning, had been all but ignored in the most influential theoretical systems of the twentieth century. The preeminent concern with quantifiable descriptors and precise terms of measurement explained for him the tendency of theorists to focus on pitch, which is more easily defined and measured than time. However, for him this seems ironic, given that music *is* temporal: "abstract sonorous shapes moving through yet simultaneously creating time. Time is both the essential component of musical meanings and the vehicle by which music makes its deepest contact with the human spirit."[167] By "time," Kramer is referring not primarily to the notated parameters of rhythm and meter, but larger concepts of the felt sense of musical motion, continuity, progression, pacing, proportion, duration, and tempo, all profound shapers of the "in time" experience of music. His point is that for music theory to focus strictly on the score, fixed as it is in time and space, and neglect the experience of music in time is to severely skew music's meaning.

Boykan has a similar concern for twentieth-century music theory. He characterizes the most dominant twentieth century paradigms of musical coherence as

---

[167] Jonathan Kramer, *The Time of Music: New Meanings, New Temporalities, New Listening Strategies* (New York: Schirmer Books, 1988), 2.

focusing exclusively on synchronic analyses and descriptions, which tend to reduce music to visual terms, to the exclusion of diachronic representations, which by their very nature would be more focused on the experience of the music in time. He would see musical meaning taught more effectively if it were viewed as a journey, rather than as if it were a map:

> We have all heard that architecture is frozen music. Conversely, musical form is often conceived architectonically; in particular, the exposition of a sonata form is thought to require a recapitulation as a matter of architectural balance. And here, it is easy to see how misleading the visual comparison can be. For the recapitulation in music is always treated as a very special—if not, indeed, triumphal—moment; if architecture were really frozen music, we would find ourselves jumping for joy at the discovery that the right side of a building is symmetrical with the left.[168]

Boykan attributes much of the confusion between theorizing music as a spatial object versus an expression of time to the careless application of the verbal literary concept of "narrative," to music literature. The problem is not borrowing metaphors from other disciplines in order to articulate musical experience; Boykan recognizes how very few words we would have for music if we did not borrow from painting, theatre, literature, architecture, etc. The problem comes if we fail to recognize the limits of those metaphors for describing a musical utterance, which as Eduard Hanslick among others has pointed out, is already thoroughly metaphorical.[169] The grave danger, as Boykan sees it, for music theory conceiving of music as an abstraction of pitch relations without the balance of rhythmic and temporal considerations, is that it very easily becomes a self-

---

[168] Martin Boykan, *Silence and Slow Time: Studies in Musical Narrative* (Lanham, MD: Scarecrow Press, Inc., 2004), 25, 27-31.

[169] Ibid., 23-24. Hanslick is quoted by Treitler, "Being at a Loss for Words," 270.

evident organic unity of a quasi-ideological nature, rather than an effective part of a dynamic and living musical education.[170]

Neither of these theorists discusses music literacy education, but their very arguments point to the question "What if musicians in music theory classes were already literate?" What if the goal of the music theorist was enabled to grow past giving students labels by which they analyze synchronic structures, and move to animating the aural experience of music by exploring tools with which to make the ineffable experience of music more understandable? It would seem that to a large degree, musical illiteracy has shaped the discipline of music theory away from the most interesting and speculative questions that have captivated musicians from the earliest times. These observations invoke learning theories, which in turn shape curricula according to large-scale pedagogical goals. Kramer and Boykan's shared vision, for music theory instruction to emphasize the experience of music in time, would seem to support the learning theory called "experiential learning," which one scholar described as "translat[ing] the abstract ideas of academia into the concrete practical realities of these people's lives."[171]

Harold Best, another composer and music educator in his grappling with the state of music education, articulated weaknesses that resonate strongly with the criticisms of Kramer and Boykan. His criticisms are particularly pertinent to this paper because they

---

[170] Boykan, *Silence and Slow Time*, 241-242.

[171] Covington, "An Alternate Approach to Aural Training," 10. Many music educators have applied the concept of experiential learning to music, including Pestalozzi (1746-1827), Lowell Mason (1792-1872), Shinichi Suzuki (1898-1998), and contemporaries James Mainwaring and Gary McPherson. See Gary E. McPherson and Alf Gabrielsson, "From Sound to Sign," in *The Science and Psychology of Music Performance*, ed. Richard Parncutt and Gary E. McPherson (New York: Oxford University Press, 2002): 101-109.

draw heavily from an analogy between musical language and our native verbal language. In his view, musicians can do only three kinds of activities: they can write music, they can present music, and they can contextualize music.[172] In his estimation when music curricula fail to begin with music as a dynamic, expressive, poetic process, they are left with a far less satisfying and less effective kind of music learning, whereby both repertoire and the verbal articulation of musical forms and grammar become static.

> Because we… have generally preferred derivations to causes, and hence grammars to linguistic processes, we find ourselves increasingly incapable of covering all the bases. As dialects and styles increase, idioms multiply, and options accrue, the procedures at hand cannot account for them… and so the great majority of music in general culture goes its way with little or no educational response.[173]

He contrasts this situation in music education with the way we approach the use of our native language, wherein we learn it so well that we all, without exception, are able to improvise in it. In fact, most of our utterances are improvised. He reasons that if such utterance is possible in our native language, why would the same ability not be possible in any language in which we truly think? This question reveals what is for him the greatest weakness in modern music education, and is producing a comparative poverty of musicianship in contrast to that of earlier generations of musicians. "Could it be that we have so saturated ourselves and our curricula with thinking about and replicating [music], each usurping the place of 'thinking in [music]' and 'thinking up' [in

---

[172] Best, "Music Curricula in the Future," 2. Best's verb choice, "present" music (versus "perform" music), is also significant in the overall concern of this paper for the concept of music performance to be expanded from its current meaning as something that happens on a stage. His overall argument supports a view of performance that is much more holistic.

[173] Ibid., 3-4.

music], that we have turned this wonderful art of ours into something less than it can be?"[174] McPherson and Gabrielsson similarly give a historical account of this situation in an article dealing with the pedagogical process of developing musical literacy, an issue that surprisingly Best does not connect overtly to the issues troubling him. According to McPherson and Gabrielsson, the preponderance of printed material overwhelmed the established primarily oral mid-nineteenth century practice of music learning, such that the most valuable parts of the established practice were simply abandoned before teachers could develop pedagogical bridges between the valuable aspects of that oral practice to the practice of literacy.

> Up until the mid-nineteenth century, the teaching of instruments was regarded as a craft whereby knowledge was passed from one generation to the next by word of mouth, often through a form of musical apprenticeship. …But changes occurred rapidly from 1850 onward. The lithograph and high-speed printing machines were invented in 1818, and by 1830 it was possible to mass-produce relatively cheap scores in large quantities. …The nature of learning to play changed quite dramatically. With access to new printed material, the emphasis shifted from the development of skills in interpretation, improvisation, and composition to music as a reproductive art, with its resultant emphasis on technique and interpretation [of printed music].[175]

This account frames the problem as the content of music learning being reduced to its literate form when printing technology became available. Best astutely points out, that learning content does not guarantee learning process. Just because we learn a language does not mean that we understand the principles by which to explain all languages. That skill lies in the realm of a linguist. Best contends that we need to educate our music students as it were "more linguistically" in order to enable them to

---

[174] Ibid., 4-5.

[175] McPherson and Gabrielsson, "From Sound to Sign," 99-100.

spontaneously think in musical language.[176] This line of thought is thoroughly consistent with the conception of musical language on which this paper rests. Best describes current music curricula as placing the highest priority on presenting pre-existent printed music, next focusing on contextualizing music (European and American music, that is), but that writing music is limited in our mainstream curricula to what amount to grammatical exercises. Rather than teaching students to think generatively, conceptually, and theoretically for themselves, we ask them to memorize the thoughts and formulae of others.[177] From a position of hearty agreement, it seems impossible to this author to accomplish this kind of depth in musical education, given the irrevocable dominance of printed music, if literacy is not upheld as a primary area of mastery.

This is consistent with the verbal literature on the relationship of oracy to literacy: oral language, i.e. verbal IQ, is a strong predictor of high levels of reading ability, and all efforts at teaching reading (at least of one's native language) assume fundamental oral language skills. Once literacy becomes established, the two systems become progressively interactive.[178] Applied to musical literacy, without this perspective on the reciprocal relationship between oracy and literacy, a person's exceptional musical oracy can assume a mythical dimension that sees no benefit to literate modes of transmission or the skills to interpret printed music. By that logic, no one need learn to read, but excellent verbal skills would be deemed sufficient. Linguistic knowledge, as Best rightly contends

---

[176] Best, "Music Curricula in the Future," 6.

[177] Ibid., 3.

[178] Thomas G. Sticht and James H. James, "Listening and Reading," *Handbook of Reading Research*, ed. P. David Person et al. (New York: Longman, 1984): 293-294.

is required, does not develop without reference to literacy. As compelling as it is to suggest that music education may be more effective if it is more musically and less verbally driven, unless we are eager to promote literacy *out of a firmly established oracy*, such musical development seems impossible to implement into the literate culture of academic music.

It may be that a lack of concern for musical oracy is precisely Best's concern, out of which no literacy can ever develop. By the same token, research in verbal reading suggests that literacy produces both better listening and better writing skills.[179] There is every reason to think that the same is true for music. It is the teacher's job to enable the two to provide the mutual benefit they can have to one another. It seems plausible to surmise that musical education has proceeded along the lesser paths described above by way of trying to cope with illiteracy. Thus, if curricula are to pursue *solving* the illiteracy problem rather than just *coping* with it, the final question with respect to what music theory is and what music theorists do asks by what logic music theorists have become the teachers of musical literacy in our music schools.

It is essential to emphasize that this question is not meant to slight the work of music theorists, nor to diminish their important roles in the formation of proficient musical thinkers. The question rather is what precise skills are required in a teacher of literacy, and whether theorists are mistakenly viewed, either by themselves or by other members of the musical academic community, as possessing those requisite skills in the greatest abundance. Egos tend to flare at such a suggestion. The whole music training

---

[179] Piera Carroli, *Literature in Second Language Education: Enhancing the Role of Texts in Learning*. (New York: Continuum International Publishing Group, 2008), 27.

enterprise threatens to derail if its members fail to recognize that the eye cannot say to the hand, "I have no need of thee."[180] It is instructive to note that a similar situation seems to exist in second language pedagogy. In that field it seems there are structuralists on the one hand who focus on the systematic and structural character of language, and on the other hand there are generativists who focus on theories of mental structures whereby learners are enabled to construct grammars. In terms of developing linguistic pedagogical tools, these two groups have dominated the landscape, but are not necessarily concerned with pedagogical processes by which students gain fluency in a language. Although there have been calls for a radical alternative to these approaches, none yet seems to have won out.[181] Carroli particularly argues that the importance of reading and readers has been underestimated in second language pedagogy.[182] The radical alternative may amount to nothing more sophisticated than a concerted effort on the part of academics to view sympathetically the work, methods, and language of those devoted to the education profession, so that communication and cooperation between the two groups can be enhanced. Such seems to have been the effort of Charles Fries in language acquisition.[183] The same kind of cooperation and communication in music would go a long way to improving literacy education, particularly for singers, whose special reading needs otherwise tend to be ignored both in curriculum development and in cognitive research.

---

[180] I Corinthians 12:21.

[181] Peter Matthews, *A Short History of Structural Linguistics,* (New York: Cambridge University Press, 2001), 152-153.

[182] Piera Carroli, *Literature in Second Language Education*, 25.

[183] Charles C. Fries, *Linguistics and Reading*, (Chicago: Holt, Rinehart, and Winston, Inc., 1962), vii-viii.

Second language acquisition specialists and music literacy teachers have similar complaints about the relevance and superficiality of the cognitive psychology applied to their disciplines.[184] Edward Klonoski offers two obstacles that prevent more mutual benefit between cognitive research and aural skills. First, cognitive research focuses on cognitive processes that underlie perception, not on perception skills per se. Secondly, he recognizes quite rightly that perception skills are not the basis of learning hierarchy in music theory pedagogy. He suggests that for aural skills classes to succeed in enhancing perception skills and developing new ones, they may need to operate independently of theory classes.[185]

It may also be worth exploring why and how oral cultures tend to give way to literate ones without recognizing and retaining what was precious in the preliterate culture. This transition may yet be an area of study in linguistics that will inform pedagogical practice in many disciplines including music. Such a history in verbal language practice may be difficult to trace in modern cultures given how old verbal literacy is, although there may well be contemporary minority language groups currently making this transition to some degree. Music may provide a corollary with a more recent history. The issue of oracy developing into literacy without losing the most valuable aspects of oracy, needs to become more prominent for voice teachers to consider, who in practicality live at the junction between oracy and literacy for singers. They stand in a

---

[184] Russell S. Tomlin and Victor Villa, "Attention in Cognitive Science and Second Language Acquisition," *Studies in Second Language Acquisition* 16/2 (1994): 185; Joel Wapnick *et al,* "The Perception of Tonal Intervals in Isolation and in Melodic Context," *Psychomusicology* 2 (1982), 35.

[185] Edward Klonoski, "A Perceptual Learning Hierarchy: An Imperative for Aural Skills Pedagogy," *College Music Symposium* 40 (2000), 168.

position to both encourage effective production of vocal sound according to oral models and to motivate independent learning skills in their students, i.e. to encourage literacy. The primary difference between rote learning or imitation, and audiation is independence: imitation is learning through someone else's ears and audiation is learning through one's own ears.[186] Singers have needed both, and likely always will.

Attitudes conveyed by prioritization of skills

While this paper's focus is on reading skills, Best's ideas above resonate with a fascinating discussion emerging concerning the connections between improvisation—i.e., a non-literate form of music making—and music reading, particularly sight-reading. It should be noted that the terms "sight-reading" and "reading" designate different activities in music. Sight-reading more particularly refers to reading a piece of music for the first time, whereas reading is the term used to indicate one is using the score versus singing from memory. Michael Rogers, among others, argues that "sight" should be dropped, and music reading should simply be referred to as "reading" as it is with words.[187] This issue will be raised again in the third chapter, where a balance between singing from memory and singing from the score will be shown to have pedagogical implications specifically for voice teachers. In terms of the present discussion however, Thompson and Lehmann make the point that both improvisation and sight-reading "involve the performance of musical material without overt preparation," and on that basis ask why it is that improvisation is thought to be an art involving individuality and expressivity, whereas sight-reading is regarded as a basically mechanical skill. In fact, both skills are what

---

[186] Gordon, *Learning Sequences in Music*, 9.

[187] Rogers, "How much and how little has changed? Evolution in Theory Teaching," 112.

Thompson and Lehmann label "open skills," requiring that the performer be able to constantly adapt to a dynamic environment.[188] While a score is static, fixed in space and time, the experience of reading is not. For example, when a singer sight-reads a song alone, she must constantly adjust to the contour and rhythmic events of the melody and the prosodic experience of the words as they occur. This experience is heightened when reading with an accompanist, or even more in an ensemble where there are multiple parts and textures of which the singer takes only one part. Unlike instrumentalists, singers in ensemble have the advantage of being able to see the entire score, not only their individual parts. Thus, listening and responding to what they hear, both in their own minds and through live aural input, is a crucial part of the reading experience.

Two analogies come to mind, one from theatre and one from hockey. In theatre, actors and actresses need to have excellent reading skills in order to understand characters and plots, and in order to prepare their roles. However, they also need improvisational skills, *not* so they can become proficient at making up their lines when they forget them, but so they discipline themselves to be in the moment, to be fully aware of their surroundings every single moment and can make good choices based on their perceptions of their partners' actions and reactions. An excellent theatre teacher will tell their students: "Your partner is more important than your line."[189] They are not suggesting the playwright's words be taken lightly. They are doing everything they can to

---

[188] Sam Thompson and Andreas Lehmann, "Strategies for Sight-Reading and Improvizing Music," in *Musical Excellence*, ed. Aaron Williamon (New York: Oxford University Press, 2004), 143.

[189] This is a direct quote from an outstanding theatre teacher, Carol MacVey. Her class at the University of Iowa proved an incredibly valuable course in the author's graduate degree for its insights into the relationship between literacy and performance.

help their students to avoid "reciting" their lines, encouraging them rather to learn their lines the way we actually live: by paying attention to what is going on around us and responding out of our interior lives. In theatre this is not reserved for post-memorization polishing, but is part and parcel of the learning process, while the actors are still "reading." Singers also must be trained to do this kind of listening *as* they read, but that is only possible if reading becomes so over-learned as to be automatic and require no cognitive effort.

A hockey analogy may seem far-fetched at first, given that no "reading" is involved. However the principle is the same, and it is offered in an attempt to highlight the dynamic nature of the experience of reading music: events occur in real time and require a player's ability to execute not only the events of his own role, but also to respond and anticipate the events generated by his fellow players.[190] After an NHL game several years ago involving the Colorado Avalanche, the host of Afterhours[191] invited the public to e-mail questions to be shared during his interview with Joe Sakic. One of the questions submitted came from a junior hockey coach from Canada's lower mainland, who asked Sakic's opinion regarding what this coach's priority should be in coaching junior hockey: systems (as some parents were pressuring) or skills? Sakic did not hesitate for an instant: "skills, skills, skills" was his emphatic answer. He went on to explain that there is plenty of time to develop the analytical side of the game after skills have been developed, but if the players do not have the skills to execute the systems they learn, the

---

[190] Ibid., 143. Thompson and Lehmann invoke soccer as an analogy; hockey by virtue of its faster pace provides an even more intense example.

[191] This is the name of the post-game show featuring interviews with one of the players.

knowledge of the systems is of no value and in fact becomes a hindrance. Likewise in music, analysis is best built on a strong foundation of basic aural and reading skills, without which, not only is analysis of little value, but it may actually hinder musical development. Sophistication of aesthetic perception becomes limited as well. One may well argue analysis and aesthetics cannot remain completely separated. But as Jonathan Kramer insightfully suggests: "The real richness of the musical experience comes from the conflict between and the combination of both modes of perception."[192] Again, the interplay between analytic and aesthetic perceptions depends most strongly on basic reading skills, even as it does in verbal language.

Interestingly, Gardner's curriculum reforms in second language acquisition sought to amend the situation whereby learners have "competence" but lack an authentic "performance" component. In music, the term "performance" is too often limited to what a student does on the stage, which in a strange reversal of Gardner's concerns, can be very successful while extremely poor competence in musical skills such as reading and audiation characterize the student's work. Gardner says that second language achievement must include a desire on the part of students to further their knowledge of the second language, which necessarily involves their strong internal motivation to make use of any opportunity that arises to improve proficiency.[193] If a singer discerns that reading skills are only expected in musicianship labs, and that in all other situations, teachers, accompanists, opera coaches, and conductors will compensate for their poor

---

[192] Kramer, *The Time of Music: New Meanings, New Temporalities, New Listening Strategies*, 12.

[193] Gardner, *Social Psychology and Second Language Learning: The Role of Attitudes and Motivation*, 13.

reading skills, then musicianship class is the only time they will think about them. That means that maybe two hours a week will be dedicated to cultivating fluent reading skills, hardly a sufficient amount of time for mastery. However, if in addition to aural skills class, students are expected to read in choir, in their individual practicing and in lessons, in opera workshop and coaching, in theory and history classes, and if a regular daily reading regimen was made the central focus of their musicianship and aural skills classes, they would spend a great deal more time on task and the results would be markedly different. It is not sufficient that students *have the opportunity* to read in these situations; particularly weak readers need to be instructed, encouraged, and compelled to read in all these situations. Weak verbal reading skills are an enormous concern for teachers from grade one to grade four, precisely because the success of these children's entire lives depends on their mastering this skill, even if aptitude assessments indicate many other strengths in the child. If a fraction of that kind of concern and remedial assistance could become a concerted aspect of college (and pre-college) music training, musical literacy would begin to steadily increase. As important as innate musicality and strong analytical skills are, they cannot rightly be developed and applied if literacy is weak.

Specific Practices that Discourage Literacy

Considering practical concerns of teaching literacy, this paper now highlights some particular practices currently common to music education, which according to principles of literacy acquisition may be contributing to the ineffectiveness of music literacy pedagogy particularly for singers. Specifically under scrutiny are an over-reliance on keyboards, the misapplication and general confusion of solmization systems, rhythm pedagogy emphasizing conceptual formulations instead of language-like flow and

viscerality, the premature loading of notation with analytical categories, and the disconnection of concerns of literacy with the applied study of performance.

Over-reliance on the keyboard

The keyboard is a wonderful instrument, and the ability to play it is an extremely useful skill to have. For this reason, many music programs require a basic keyboard proficiency of all non-keyboard majors, whereby they learn to negotiate the keyboard through basic keyboard musical figurations such as scales, chords, and arpeggios. For many students who play another instrument or sing, this is an important experience in learning to read more than one clef simultaneously, in mastering basic knowledge of the keyboard and in understanding experientially the nature of keyboard music, even though their actual keyboard skill remains modest. It is thought to be a basic (even remedial) course, and thus students are often encouraged to enroll in it as a co-requisite with freshman theory to allow the knowledge it provides to serve them by enabling them to play four-part harmonizations and such. Even when courses in keyboard fundamentals are not administered by the theory department, as is often the case, theory teachers can and do still conceive of them (or covet them) as a laboratory for theory just as they do with aural skills. However, as useful and important as keyboard skills are, the keyboard cannot teach everything. Its primary benefit is definitely not teaching literacy.

The obstacles for a non-keyboard player in learning to read two clefs simultaneously and negotiating what for a surprising number of them is a completely foreign instrument cannot be underestimated. Theory teachers, particularly those whose primary instrument is the piano, must ponder and accept the limitations unfamiliarity with the keyboard poses for their students, even those who are co-registered in a

keyboard fundamentals class. If they have spent any time teaching beginners how to play the piano, they are more likely to understand this, but if they have not, they may not fully grasp how much attention is required for a beginner even to negotiate the keys, let alone realize blocked seventh chords, for example, which for monophonic instrumentalists is a huge challenge. It is very easy for a theory teacher to rely too heavily on the knowledge acquired in basic keyboard classes to assist with theoretical understanding of these abstractions. They must constantly be wary, especially if they are pianists, to what degree they are assuming a familiarity with the keyboard that is impossible for a beginner. Most of all, they must realize that keyboard skills have nothing to do with literacy, so if their students are struggling with literacy *and* are unfamiliar with the keyboard, keyboard exercises will be impossibly difficult.

The ways in which theorists assume keyboard knowledge are not always overt. For example in music theory, all the major keys are commonly introduced in notation at once, and in many theory textbooks comprehensive charts of all the scales are a starting place. The very equating of scales and keys may well belie a keyboard bias in theory instruction. To adhere to "Sound before Sign" keys should be taught aurally first, and can be taught extremely effectively with solfège syllables without introducing notation at all. A notated scale, on the other hand, is a theoretical distillation of a key and, A) has more practical application to piano literature than it does to singing literature and, B) is of little help in encouraging audiation. A marked contrast to this approach can be seen in the old text *Solfège des Solfèges*, by Adolphe Dannhäuser, presumably representative of an earlier practice of music literacy training that is not keyboard centric. While Dannhäuser's text is an exemplar of fixed-DO solmization, and uses a diatonic rather

than pentatonic point of departure, neither of which the author wishes to endorse necessarily, and underlining the caveat that the most important ingredient in literacy pedagogy is a skilled teacher, Dannhäuser exhibits specifically five sensitivities even in the way he lays out his text that challenge current more keyboard centric theoretical approaches to music literacy pedagogy: the value of repetition of patterns; internal tonal relationships, i.e., diatonic interval patterns emphasized initially; the gradual introduction of different keys; the subtle integration of rhythmic and pitch elements; and the gradual introduction of clefs. It may be helpful to draw specific contrasts with a popular modern aural skills textbook.

The stipulated multiple repetitions of every whole tone and semitone pattern, ascending and descending, and maybe even that of the larger intervals Dannhäuser seemingly means to be introduced aurally, as he recommends these exercises to be used by mothers with young children. Regardless of his intention in this regard, this would be a sound mode of presentation. The abstract construct of a scale is not introduced until after these patterns repeated using to their solfège syllables are thoroughly established in lengthy exercises on the first four pages. The key of C major is the only key for the first thirty-five pages of exercises, which introduce increasingly complex rhythmic language and gradually introduce chromatic inflection of notes within that context before other keys are formally introduced. This allows the skill of visually associating a particular note on the staff as being central to develop more solidly than it does if one changes up the keys too quickly. By contrast, Robert Ottman's text introduces five different scales on the first page where reading pitch is introduced, and there is no mention of or provision for aural exercises with which to grow accustomed to the patterns of whole tones and

semitones, although nothing is to prevent a skillful teacher from doing this. Even before Dannhäuser formally teaches rhythmic language, the use of a metronome is recommended to establish the quarter note pulse for the long whole notes in the repetitions of intervals, an effective way of immediately causing students to pay attention subconsciously to rhythmic structure. Conversely, Ottman's first twelve-page chapter of exercises is entirely dedicated to rhythmic reading without any mention of pitch, making the integration more laborious. After gradually introducing accidentals as chromatic inflections in the context of the key of C, Dannhäuser then introduces the chromatic scale beginning on C, followed immediately by A minor, C major's relative key, and does not introduce the key of G until page thirty-seven, whereupon three pages of exercises in the key of G are presented before another key is introduced. That pattern of major followed by relative minor, one new key at a time, is maintained throughout the book, a pattern consistent with LA-based minor pedagogy and arguably having a stronger basis in vocal repertoire than in keyboard repertoire. Lastly, the bass clef is not introduced by Dannhäuser until page fifty-two, after substantial skill in decoding staff notation has already been established, compared to Ottman's immediate introduction of bass clef on page thirteen in explanation and page seventeen in sung exercises. None of these aspects are overtly keyboard centric, but the differing emphases and sequential ordering of presentation in popular aural skills texts of today seem at least partly influenced by a bias toward the keyboard.

It seems many keyboard-proficient theorists make the same assumption as Emily Brink: that playing an instrument requires a greater degree of abstraction than singing, and thus a higher degree of comprehension. She claimed, "By singing one could match a

pitch without being able to name it or without consciously arranging his vocal cords. An instrumentalist *must not only conceive the pitch internally*, but also its means of execution by calculating precise digital and possibly even embouchure requirements." (Italics added)[194] This claim does not explain instrumentalists who cannot "conceive the pitch internally," i.e., are classified as tone-deaf because they struggle to match pitch, nor pianists who have taught themselves to play by ear, but for whom written music is meaningless and they could not name a single note. Gordon, on the other hand, sees scales as an analogy to the alphabet: a person does not read the alphabet; he reads patterns using the alphabet.[195] Pianists learn scales very early in their training in order to master the topography of the keyboard: how many black notes are involved, which ones, and which fingering scheme is most effective for speed and fluency.[196] For theorists who are pianists, scales feel basic and fundamental. However, pianists may be able to play every scale accurately at lightning speed, correctly answer which accidentals are invoked for each one, and still have poor aural mastery of keys. Gordon observes, "For many young pianists who cannot audiate… the piano keyboard represents nothing musical. The keys become another set of musically meaningless symbols which activate the decoding process. Without audiation, notation can reveal little."[197] In terms of musicianship, instrumentalists and singers must both learn to conceive the pitches internally. If

---

[194] Brink, "A Cognitive Approach to the Teaching of Aural Skills Viewed as Applied Music Theory," 80-81.

[195] Gordon, *Learning Sequences in Music*, 24.

[196] Some variation of this is true for all instruments besides voice, as much of the literature prominently features fluent scales.

[197] Gordon, *Learning Sequences in Music*, 59.

instrumentalists fail to do this, they can still fool people into thinking they are literate by following fingering patterns and pushing the right buttons at the right time, but singers have no such option.

It is significant that most of the sight-reading studies that have been published have been instrumental studies, particularly piano.[198] While this is understandable given the cognitive complexities of reading vocal music, such research produces skewed data in terms of generalized sight-reading skills. Sloboda also points out that the onus is on the investigator in such studies to prove that such music reading properly represents *musical* perception at all. He locates himself among the skeptics who proceed from the hypothesis that such music reading is "a visuo-motor task that does not [necessarily] engage any of the cognitive processes specific to and necessary to musical perception. According to this hypothesis, visual signs are converted directly into prescriptions for action without any musical mediation."[199] On the other hand, because singers decode directly from symbol into sound with no visible physical manifestations for pitch, one may think of singing as a

---

[198] Andreas C. Lehmann and Anders Erickson, "Performance without Preparation: Structure and Acquisition of Expert Sight-reading and Accompanying Performance," *Psychomusicology* 15 (1996); Andreas C. Lehmann and Victoria McArthur, "Sight-Reading," in *The Science and Psychology of Music Performance*, ed. Richard Parncutt and Gary E. McPherson, 135-150. (New York: Oxford University Press, 2002). Lehmann and McArthur note that they are aware of roughly a hundred sight-reading studies in the music education literature, but that their usefulness in generalizing sight-reading principles is unfortunately limited due to a lack of agreement in methodology (p.145). Of the twenty specific sight-reading studies they reference in their article, none concern vocal music reading, and more than half deal exclusively with piano music reading. The authors go so far as to claim that pianists may have more opportunities to read than other non-keyboard instrumentalists (p.143), a completely unsubstantiated claim, which seems to beg the question of how non-keyboard instrumentalists, including singers, ought to learn to function as literate musicians.

[199] Sloboda, *Exploring the Musical Mind*, 28.

purer mode of musical thought. This is the very logic by which sight-singing forms the core of aural skills training. In terms of measurement, hand-eye coordination is not an appropriate measurement for music reading for singers, as has been pursued for numerous piano reading studies,[200] but "eye-voice span," a measurement tool that has been demonstrated as a strong indicator for fluent verbal oral reading,[201] would seem to be a more appropriate tool to use in assessing singer's reading skills, and has been recognized as such. Even so, such studies are rife with challenges: whether the singers would be assessed using solfège, if so, which solmization system, and if reading would involve words as well as music. These are all genuine challenges in the establishment of such empirical experimentation, to say nothing of accurately calibrating incoming knowledge and skill of the readers for the purposes of comparison. These may be part of the reason that the struggle many singers have in learning to read music does not seem to be proportionately reflected in the experimental literature.

One of the keyboard's primary characteristics, by virtue of its ability to sound many notes simultaneously, has some apparent connections with "chunking," an inarguably essential skill in learning to read. Music psychologists have rightly adopted chunking as a perceptual sub-skill of sight-reading,[202] but the music psychology

---

[200] See for examples: Andrew J. Waters and Geoffrey Underwood, "Processing pitch and Temporal Structure in Music Reading: Independent or Interactive Processing Mechanisms?" *European Journal of Cognitive Psychology* 11/4 (1999): 531-553; Louise J. Banton, "The role of visual and auditory feedback during the sight-reading of music," *Psychology of Music* 23/1 (1995), 3-16.

[201] Allington, "Oral Reading," 848.

[202] Lehmann and McArthur, "Sight-Reading,"138-142, recommends four categories of sub-skills involved in sight-reading: perceptual, kinesthetic, memory, and problem-solving. There are several ways in which their schemas fail to address issues in sight-

literature's bias toward keyboard sight-reading threatens to skew the concept of chunking for music reading purposes. It is important, particularly for keyboard fluent theory teachers to distinguish between a keyboardist's ability to play chordal structures and the literacy skill of chunking. Chunking describes the skill by which a reader does not fixate on individual parts of a structure, but rather recognizes a whole. Nation describes four types of verbal chunking: letters, morphemes, words, and collocations. In chunking at the letter level, the reader does not analyze a letter by its visual qualities. For example, the literate reader does not see two opposing diagonal lines that meet forming a downward-facing thirty-degree angle, under which is another line running between them parallel to the *x*-axis; instead the reader recognizes the letter 'A.' At the morpheme level, letters are grouped into words, and the reader recognizes the word, not the individual letters. As words increase in complexity, readers learn to recognize even complex words as units, not as compilations of individual parts, e.g. player, not play + er. Finally, collocations are groups of words that are processed as a unit, and not seen in their separate entities.[203] To translate this process of reading fluency into musical terms as equivalent to playing a chord on the piano is to make a leap from a perceptual skill to a kinesthetic skill. Playing a chord on the piano quickly and fluently is a motor skill that is dependent on keyboard proficiency. The visual recognition of the structure of a chord cannot be adequately

---

reading for singers because of a strong pianistic bias, including their discussion of chunking, the parameters for kinesthetic measurement, and their definition of problem-solving skills. Their idea of auditory feedback as an insignificant measure of sight-reading performance not only could not be accomplished for singers, but also avoids the question of cognitive processing in the sight-reading process.

[203] I.S.P. Nation, *Learning Vocabulary in Another Language* (New York: Cambridge University Press, 2001): 319.

evaluated by means of keyboard proficiency for students who are not keyboard proficient. And the development of music literacy does not rely on, nor is it necessarily related to keyboard proficiency.

George Pratt distinguishes instrumental reading from singing as two different types of reading: "One is to see [music's] symbols and react mentally and physically to them straight on to an instrument. The other is to convert the symbols into *imagined* sound inside your head."[204] He places tremendous value on the second type of reading, and acknowledges that it is best developed by singing. One's vocal quality is not the issue, but a musician must learn to accurately reflect the sounds in the mind using the voice. If instrumentalists struggle with singing, such that they are labeled as tone deaf or unable to accurately match pitch, this reveals a serious musical handicap that must be addressed before they will be able to progress as musicians, regardless of their primary instrument.[205]

To return to the language analogy, the keyboard is to a singer what a dictionary is to a language user: an excellent and necessary reference tool (in the absence of perfect pitch), but if, for reading, it must be consulted for more words than not, reading will be a painstaking process that will most likely lack fluency, accuracy, and enjoyment. Furthermore, there are many situations where it is not convenient or even possible to "consult the dictionary." Some theory teachers will insist that the piano's visible manifestation of pitch helps the student with the spelling of chords, but this is not necessarily true at all. The keyboard is unable to help a student distinguish between an

---

[204] George Pratt, *Aural Awareness: Principles and Practice*. Rev. ed. (New York: Oxford University Press, 1998), 107-108.

[205] See footnote 16.

A# and a B ♭ . In the sense that Gordon describes—that the keyboard is another set of symbols that activate the decoding process—a certain kind of spelling can be said to be achieved. But such spelling depends entirely on familiarity with the keyboard's symbols. The purest form of spelling that creates an even playing field for all types of musicians, and is most concerned with audiation, is centered on the staff.

Thus the keyboard, as useful a tool as it is, becomes a burden when confused with the acquisition of musical literacy. Theorists whose primary instrument is the piano and therefore who conceive of music easily, even primarily, in pianistic terms, must make sure that keyboard knowledge is not assumed as either essential or even helpful to developing literacy. Even for pianists, the development of musical skills apart from the piano is essential for cognitive musical development. A theory teacher (and for that matter, a voice instructor) does well to steer clear of the keyboard for the teaching of literacy, if for no other reason than to make clear to singers and instrumentalists alike that musical literacy has nothing to do with playing the piano.

Confusion of solmization systems

Besides the resounding question of whether literacy is properly the theorist's concern, the proponents of various solmization systems would do well to recognize that rather than an outright rejection of one system over another, the pressing issue is a recognition of the most effective order and timing by which to introduce the various systems in a student's musical development. Wholesale agreement on solmization systems across the board, which admittedly has been absent for six hundred years,[206] may be neither a possible nor a desirable goal. Research has not yet proven one solmization

[206] Smith, "A Comparison of Pedagogical Resources in Solmization Systems," 1.

system superior to another.[207] With all due respect to calls for science to settle the debates about solmization systems,[208] that such a thing could be established through scientific means remains a point for skepticism. Even if it were, it is even more doubtful that one system would easily and quickly become ubiquitous. Rather, just as there is a time and place for people to learn to talk, to learn to read, and to learn grammatical structures, each invoking different pedagogical tools to assist the process, so there is a time and appropriate process for musicians to learn various aspects of the musical art. To expect a single system to accomplish everything is unrealistic, and to expect a system to accomplish anything at all without musically knowledgeable and pedagogically skillful teachers seems ridiculous. Kathy Thompson makes the point that most aural skills textbooks compile exercises but leave the conceptual framework up to the individual teacher.[209] While this makes textbooks versatile for differing approaches, it may also be a strong indicator of the ultimate problem: that music literacy education for many has been reduced to a question of what system is used, rather than an understanding of the principles by which teachers should apply those systems in the pursuit of cultivating literacy.

For example, both parties in the aforementioned debate in the *Journal of Music Theory Pedagogy* agreed that moveable-DO is superior to fixed-DO as a literacy-teaching

---

[207] Thompson, "A Qualitative Study of Metaphors for Pitch Perfection," 84. Kathy Thompson is an aural skills teacher with perfect pitch, who has admirably documented her effort to teach (and learn from) her students how to think in relative pitch. Her article is largely descriptive, but shows an admirable knowledge of the aural skills literature.

[208] Smith, "A Comparision of Pedagogical Resources," 2.

[209] Thompson, "A Qualitative Study of Metaphors for Pitch Perception," 82.

device, a point many have agreed upon.[210] Timothy Smith took the position that DO-based minor is superior to that of LA-based minor; Micheál Houlahan and Philip Tacka argued in favor of LA-based minor. The details of their arguments are set forth in great detail, but the point to be made here is that associated with their respective positions are very clear attitudes about the importance of music literacy. Smith, arguing for DO-based minor believes that literacy is less important than upholding (from day one) static structural categories of music. He clearly believes that analytic sophistication is not only the more valuable skill, but also clearly believes it can be learned without a basis of literacy: "DO-tonic solmization … presents the ideal vocabulary for teaching functional harmony… [It] facilitates the teaching of aural skills because it names structures the way students hear them."[211] At one point he even admits, "The LA-minor system operates on the relative relationship between modes, allowing *singers* to move unencumbered from major to the relative minor without having to incorporate syllabic modifications that account for a new tonal center." (Italics added.)[212] Given the allegedly poor musicianship skills of singers that forms the core of this paper's interest, there may be a correlation. Houlahan and Tacka, on the other hand, argue that LA-based minor is more supportive to

---

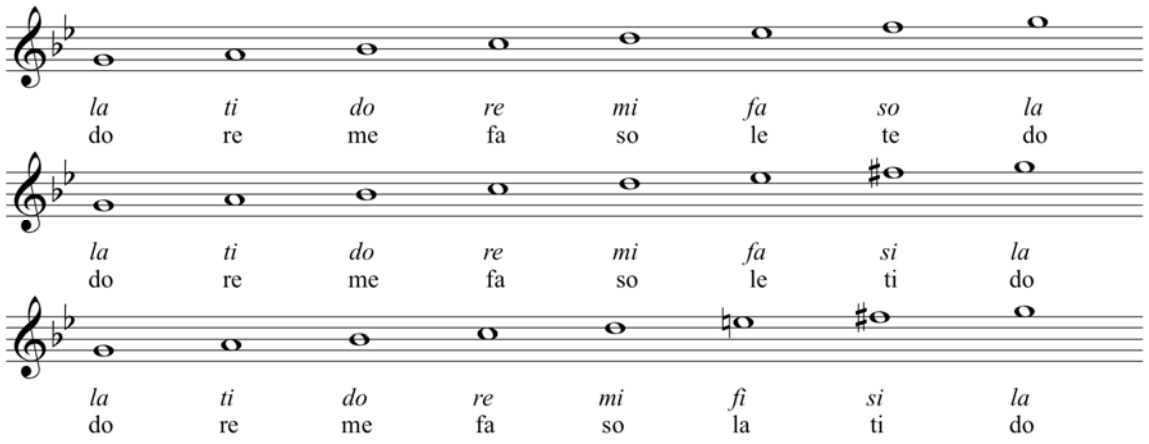
[210] Timothy Smith explained the superiority of moveable-DO over fixed-DO at some length; see also More, "Sight-singing and Ear-training at the University Level," 15.

[211] Smith, "A Comparison of Pedagogical Resources in Solmization Systems," 15.

[212] Ibid., 13. His argument reveals the strong bias for parallel keys as the more important, versus relative keys. It is interesting to note that this bias has not always been accepted, nor will it necessarily always be the predominant bias. The reader is referred to a recent Ph.D. dissertation, which sets forth a theory with a stronger emphasis on relative relationships than parallel, seeing third relationships as "modulatory in nature" and of greater importance in accounting for both early and later developments in harmonic language. José Miguel Ribeiro-Pereira, "A theory of harmonic modulation: The Plastic Model of Tonal Syntax and the Major-Minor Key System," Ph.D. diss., Columbia University, 2004.

developing musicianship (which term they all but explicitly equate with a high form of literacy) because there is a direct connection between the solmization syllables and the visual code represented by the notes. Helpful as DO-based minor is for distinguishing aurally between major and minor scales after literacy has been established, LA-based minor exhibits a much stronger equivalency between solmization syllables and notated code. The solmization syllables for DO-based minor not only do not reflect the visual code, they reflect the opposite of the visual code: readers must *lower* syllables for which no visual sign of note-lowering occurs, and the notes requiring *raising* in the notation merely return to major syllables. See Figure 1. When theorists insist on DO-based minor as the starting point, they ignore the decoding process for students who are learning to read, asking them *before* they are literate to harmonize two conflicting systems, a notational system that requires adding sharps to *raise* pitches not accommodated by the key signature, and a solmization system that *lowers* pitches containing no accidentals in the notation.

Figure 1: LA- and DO-based minor syllables translated into symbolic code



Once students have learned to read, the introduction of the DO-based minor can be helpful for clarifying the aural similarities between major and minor tonalities, but instructors complicate literacy acquisition impossibly when they insist on starting with this theoretical construct before students have properly learned to decode the symbols.

Beyond this confusing particularity, such an approach generally transgresses a basic pedagogical principle: theoretical explanations should rightly occupy the final stage of learning. Much music literacy pedagogy in America today is theoretically driven, and the arguments about methodology as a result end up centering on which system is more theoretically productive, rather than what process best serves musical literacy.[213] Smith and those like him seem to believe that aural understanding can be achieved through an analytical mode of discourse; Houlahan and Tacka and those like them argue that aural understanding has to be accomplished aurally before any analysis of it is possible.[214] The pedagogical literature supports the latter position overwhelmingly more than the former, but that has not altered the continued practice. While the entire Smith – Houlahan/Tacka debate gives far too much credit to the systems themselves to teach literacy, Houlahan and Tacka are clearly teachers who have chosen LA-based minor because they believe that literacy has to be established before analytical categories can be understood.[215] This

---

[213] Houlahan and Tacka, "The Americanization of Solmization," 148-149.

[214] Ibid., 146. See also Timothy A. Smith, "Liberation of Solmization: Searching for Common Ground," *Journal of Music Theory Pedagogy* 6 (1992): 166; Micheál Houlahan and Philip Tacka, "Continuing the Dialogue: The Potential of Relative Solmization for the Music Theory Curriculum at the College Level," *Journal of Music Theory Pedagogy* 8 (1994): 221-225.

[215] Houlahan and Tacka, "The Americanization of Solmization, 137.

is evidence of the strong influence of Kodály on their thinking, a fact they embrace unapologetically.

Kodály has made a monumental contribution to the cause of music literacy pedagogy, and his principles if not his methods always deserve being (re)visited by those teaching music literacy. Three very important principles he taught can be seen in the approach of Houlahan and Tacka, all of which are transgressed by much music education practice today. First of all, Kodály insisted that aurally, the semitone was the most difficult interval to master, and thus diatonic music should be approached via a solid foundation of pentatonic music.[216] In general, pentatonic scales are taught in theory classes as one of the "other" scales, diatonic major and minor being presented as the most normative. Secondly, Kodály taught that the aural use of solmization syllables and their respective hands signs should be well-established before notation is introduced. The hand signs have the double function of allowing a teacher to dictate pitches for students to sing without relying on notation, and for singers to reinforce pitches with a meaningful physical gesture in the absence of a physical domain for pitch. If this practice was upheld in music education, aural skills instructors would not see mistakes like students singing the right pitches to the wrong syllables, or even worse, the right syllables to the wrong pitches. Those kind of categorical errors result directly from introducing signs, before the sounds are thoroughly understood on their own terms. Thirdly, Kodály advocated the learning of musical language from well-known folk literature, not from theoretical constructs. In Kodály's practice, singers are first taught to label sounds by attaching

---

[216] Zoltán Kodály, "Pentatonic Music," *The Selected Writings of Zoltán Kodály*, (London: Boosey and Hawkes, 1964), 221.

solfège syllables to familiar songs, thus aiding learning and retention. Eventually those familiar songs are translated into staff notation.[217] In the absence of a physical domain for pitch, the singer's primary attention to the aural labels of the syllables is transferred to the lines and spaces of the staff. As such, as Kodály and others have pointed out, for a singer there are practically only seven major and seven minor keys to decode:

Major:	Minor:
C# F#	A# C# D# F# G#
A B C D E F G	A B C D E F G
A♭ B♭ C♭ D♭ E♭ G♭	A♭ B♭ E♭

For singers, learning to read staff notation will be straightforward if a solid foundation of aural pitch and rhythm skills has been laid. Once the ear understands the internal relationships of keys through solfège syllables, seeing them plotted on a staff in the seven different configurations possible is not a difficult transition, albeit one that must be taught. If students have mastered keys aurally, they bring to staff notation musical understanding of pitch relationships that the undifferentiated equidistant lines and spaces cannot convey. This is similar to children's familiarity with words and their usage helping them to overcome (in English) the numerous incongruities in rules of pronunciation, which, it bears noting, are not all presented to a beginning reader at once, and not in a lecture. The ambiguity inherent in the staff, with all due respect to Stanley Fletcher's suggestion that we color-code the staff to highlight DO visually,[218] is not an insurmountable difficulty for teaching reading. Such a suggestion underestimates the effectiveness of a solid aural foundation before notation is introduced at all. However,

---

[217] Houlahan and Tacka, "Sound Thinking: A Suggested Sequence for Teaching Musical Elements Based on a Philosophy of Zoltán Kodály for a College Music Course," 88-89.

[218] Fletcher, "Music-reading Reconsidered as a Code-learning Problem," 92-93. There is actually precedence for the use of color as a visual indicator in early notational practice.

Fletcher's emphatic concern that musical literacy be oriented to the staff and not to an instrument is exemplary.

Conceptual vs. experiential rhythm

If theorists tend toward theoretical abstractions for teaching pitch, rhythm is approached even more abstractly. Rhythm is also easy to teach aurally when one uses rhythmic syllables combined with physical movement. Kodály taught a system of rhythmic syllables for learning to read rhythmic notation, which have been used very successfully, particularly at the lower levels. More complex rhythms, and mixed meters, however, are not served well by Kodály's system. More recently, a new system, the "Takadimi" system has been developed, its goals definitely aimed at literacy. Its developers on the one hand were seeking to overcome the weaknesses of both Kodály's system, as well as the tedious approach in much American music education that features variously subdivided beat counting, while at the same time on the other hand wished to maximize accessibility for beginners.[219] Verbal language had a strong influence on Takadimi's development, as the pedagogical practice of Indian tabla drumming was a strong influence for its developers.[220] When learning the tabla, a drummer first learns to speak rhythms, and then learns to drum them. The syllables of the Takadimi system simplify complex rhythms by orienting the student to the beat and then gradually to more

---

[219] Richard Hoffmann, William Pelto, and John W. White, "Takadimi: A Beat-Oriented System of Rhythm Pedagogy," 8-9.

[220] Ibid., 8. It should be noted that as a rhythmic teaching device, Anne Carothers Hall's book *Studying Rhythm* uses English language extensively by including in each chapter a rhythmic setting of a poem, framing the iambic patterns in a meter. In Hall's presentation, the language exercise acts as an application of the rhythmic principle, not a tool to help the rhythmic principle be executed fluently aurally. Both are legitimate for their respective pedagogical intents. Indeed, Hall's application of rhythm to poetry is precisely what composers of vocal music do, and what singers do when they sing it.

subdivisions of the beat, incorporating syncopation, mixed, and irregular meters far better than Kodály's system. When Takadimi is taught aurally first, ideally allowing the process of learning the syllables to also involve bodily movement and a systematic progression in difficulty, many of the hang-ups students have in rhythm reading are enabled to disappear.

This is not the way rhythm is typically approached in a theory classroom. If rhythm is a weakness for students (which it is for many of them), lectures about rhythm are not going to help them overcome the weakness, particularly when within three classes they hear lectures that introduce meter and durational values of notes and rests, move on in the next class to syncopation and *hemiola*, and culminate in hypermeter, all before they have learned to read rhythmic notation fluently. Such lectures may be helpful for a musically literate class, but for people learning to read, they are the opposite of helpful.

Rather, understanding rhythm aurally and experientially from the kind of linear flow that is associated with speech rhythm combined with kinesthetic sensations of movement and weight has proven an effective way of teaching rhythmic literacy. This understanding is of particular importance to singers, because in vocal literature rhythm is expressed as language declamation, and the relative approximation of musical rhythm to actual speech rhythm is one of the most distinguishing features of the vocal art. For singers particularly, teaching rhythm aurally using verbalized syllables transfers directly into their music making. Even for instrumentalists, particularly for pianists and percussionists, hearing how the rhythm works through verbal utterance teaches linearity more strongly than their instruments naturally encourage. Leaving aside interesting speculative questions as to the origins of language and music, it seems that we first

experience the concept of the linear flow of elements through time in verbal language. Thus when sound is stylized and systematized as it is in music, it makes sense that verbalization will aid the understanding of rhythmic flow.

Melody, scales, chordal arpeggiations, and harmonic progressions all depend on this sense of flow for successful rendering because they are subsumed by the rhythmic linearity in which they exist. If a student has a poor sense of rhythmic flow, every other musical element will languish and learning to read will be extremely difficult.[221] Elliott's study on instrumental sight-reading showed a very strong correlation between rhythmic reading ability and overall sight-reading skill.[222] Given that most theoretical paradigms for pitch analysis ignore the facet of rhythmic linearity altogether, it is not surprising that rhythmic literacy acquisition remains weak.

Some cognitive research studies indicate that "processing temporal information can occur independently from the processing of pitch, but the processing of pitch is constrained by the processing of temporal information to a certain extent."[223] For this reason, some aural skills instructors advise students to listen separately for rhythm and pitch in dictation exercises, a practice Karpinski among others advises against. Cognitively it gives the short-term memory two separate sets of information to

---

[221] Diana Deutsch and John Faroe, "The Internal Representation of Pitch Sequences in Tonal Music," *Psychological Review* 88 (1981): 503-522.

[222] Charles A. Elliott, "The Relationships among Instrumental Sight-reading Ability and Seven Selected Predictor Variables," *Journal of Research in Music Education* 30 (1982): 5.

[223] Waters and Underwood, "Processing Pitch and Temporal Structures in Music Reading: Independent or Interactive Processing Mechanisms?" 550.

remember, and apparently one larger set of information is better than two smaller ones.[224] Rather, the addition of kinesthetic elements to both tonal and rhythmic vocabularies has proven to aid in uniting rhythm and pitch elements in the musical imagination. Particularly for singers, where the physical movements of their instruments are so small as to be imperceptible even by themselves, bodily movements play a powerful role in reinforcing mental imagery. A concern for developing "intermodal imagery" is often overlooked in the theory classroom, and as George Pratt points out, in music psychology as well.[225] Without these integrative tools, the leap between rote musicianship and literate musicianship proves too large for most students, and illiteracy prevails. Much of this work for singers may fall best to voice teachers themselves, and the final chapter of this paper will explore how voice teachers can help their students to accomplish literacy without sacrificing their goals of performance development.

Premature introduction of analytical categories

As has already been implied in the discussion about solmization confusion, some music theory teachers try to use aural skills to reinforce analytical categories, without understanding the process by which that becomes possible. This position was the very subject of Emily Brink's theory dissertation thirty years ago, which is approximately when it seems this approach took root in university theory curricula.[226] Brink states that

---

[224] Gary S. Karpinski, "A Model for Music Perception and its Implications in Melodic Dictation," *Journal of Music Theory Pedagogy* 4 (1990): 199.

[225] Pratt, *Aural Awareness*, 140.

[226] One may well argue that the roots of the logic go back to the curriculum revision enterprise of the 1960s and early 70s, commonly referred to as Comprehensive Musicianship, which was ultimately abandoned for various reasons, including that it placed too heavy a load on individual faculty members. In a critique of the

while aural skills are generally accepted as relating to the analysis of musical structure, it is less well accepted that the reverse is also true, that analytical skills directly relate to the aural discovery of musical structure. Therefore, she reasons, the relationship between aural skills and analysis should be strengthened in the undergraduate theory curriculum.[227] It would seem that this became the logic whereby aural skills classes became laboratories for theory, and theory teachers sought to unify the content and pacing of aural skills and theory, turning aural skills into applied theory. The crucial aspect this line of reasoning fails to consider is the role that literacy has to play in allowing this mutual benefit to occur. If literacy is not the foundation on which theory teachers are building, then analytical skills cannot strengthen aural awareness. They in fact become an obstacle.

There are some clues about why such a neat exchange is not as easy as it sounds, beyond weak literacy outcomes. For example, Brink admits that music theory and ear training have a much shorter history than sight singing, which can be dated at least to the eleventh century. She also comments, "probably the broadest change [in music education] in the twentieth century is the transition from sight singing to ear training as

---

comprehensive musicianship enterprise, Cutler Silliman offered four cautions that have strong resonance with issues under current discussion, including the very claim of comprehensiveness itself, the danger of premature attempts at synthesis, the undesirable encroachment of theory on areas such as applied music and history, and impatience with the mastery of details before creativity is encouraged. See A. Cutler Silliman, "Comprehensive Musicianship: Some Cautionary Words," *College Music Symposium* (Fall 1980): 129.

[227] Brink, "A Cognitive Approach to the Teaching of Aural Skills Viewed as Applied Music Theory," 3. The thesis of her dissertation is that the aural and analytical dimensions of music are inseparable (p. 51), not that merely this is a long-term pedagogical goal, but that by definition they are one and the same.

an important pedagogical emphasis."[228] She places sight-singing objectives more rightly into performance curricula and recommends a decrease in their inclusion in theory, claiming instead aural comprehension for music theory, as if the two had no relationship at all.[229] It is one thing to suggest that learning to read music should be the concern of performance teachers, so that theorists can focus on theoretical instruction. It is another thing for theorists to proceed in the teaching of theory as if their students were literate when they are not. Perceptual aspects of music may only be successfully incorporated into notated structural paradigms, as Brink claims is possible, if students have learned to read the symbolic code they are being asked to analyze. Students otherwise learn to dissect the code as they are instructed, but the holistic claims of a cognitive/structural approach of ear training and sight singing instruction are not realized, because for all their skill at applying Roman numerals, identifying keys and cadences and modulations, students are not able to audiate the sounds.

This has led practically to two categories of musical literacy, a lower level and a higher level. The lower level of literacy allows musicians to interpret written music by correctly identifying its notated grammatical elements but does not enable them to hear in the mind's ear what it sounds like. The higher level of literacy teaches musicians to hear notated music accurately in the mind's ear, and when that is firmly established, teaches

---

[228] Ibid., 33, 7.

[229] Ibid., 55; Roger Foltz criticizes the "fashionable trend" for theorists to give less classroom time to sight-singing, in an article written just two years after Brink's dissertation. Roger E. Foltz, "Sight Singing in Relation to the Total Theory Program," *Indiana Theory Review* (Winter 1981): 4.

them to interpret structural elements.[230] There is little doubt that teachers of music theory would prefer to have the higher level of literacy if they could. Achieving a higher level of literacy is entirely possible, but will require a revamping of theoretical instruction, such that music theory is able to build on firmly established aural skills and literacy, but does not interfere with their acquisition. Aural skills and music reading would be more effectively viewed as the gateway to theoretical analysis, not its laboratory. Skill in music theory is the outcome of musicianship skills; musicianship skills are not the outcome of theoretical instruction.[231]

To return to the linguistic analogy, the lower type of literacy, whereby symbols are recognized and structurally identified correctly but the sounds are not fluent, is not considered an adequate goal for L1 literacy pedagogy, but seems to be at least an acceptable outcome of much foreign language pedagogy. Brink even appeals to foreign language pedagogy outcomes as support for moving away from the music literacy that enables mental hearing toward literacy that merely allows analysis:

> As an adult one can gain a reading knowledge of a foreign language, understand when that language is spoken, and yet not be a competent speaker himself in that language. He can use the language to study and to listen, but not to speak. For his purposes, competence in reading and listening may well be sufficient. Were he to have learned the language naturally, as a child, speaking would have preceded reading knowledge, but to insist that speaking is requisite for reading and listening competence is unjustified.[232]

---

[230] Sloboda, "The Psychology of Music Reading," 7-9. It is interesting to note that because audiation skills are inconsistently developed among "trained" musicians, researchers have admitted having reservations about notational audiation as a category on which to focus experimentation. See Warren Brodsky *et al*., "Auditory Imagery from Musical Notation in Expert Musicians," *Perception and Psychophysics* 65/4 (2003), 603.

[231] Gordon, *Learning Sequences in Music*, 76.

[232] Brink, "A Cognitive Approach to the Teaching of Aural Skills Viewed as Applied Music Theory," 36.

Not only can her analogy of musical language with foreign language be said to be less than adequate, given the distinctions between the correlations between L1 and L2 and musical language established in chapter one. Her assertion that such reading competence "may well be sufficient" is arguable, quite possibly for foreign language pedagogy, but most certainly for music pedagogy. That such literacy represents the highest goal for foreign language acquisition, and therefore should suffice for music theory, would seem a dubious assumption.

The practice of sight-singing in musical literacy, thought by many to be the primary and best demonstration of audiation skills, is comparable to the practice of oral verbal reading. It is instructive that pedagogues of verbal reading have learned, albeit the hard way, to theorize the differences between silent reading and oral reading without discrediting one over the other. Oral reading is different in its task demands, often occupies a different instructional setting, and places a stronger emphasis on phonological aspects of language than on meaning comprehension. Assessment of oral reading used to focus on cataloguing and enumerating errors, but eventually reading experts began to pay attention to the facet of fluency. When fluency took its proper place alongside accuracy and reading comprehension, oral reading was properly established as accomplishing its own essential pedagogical goals in the grand scheme of literacy education, and requiring equal time with comprehension practice.[233] Some of the most recent work on reading places fluency in the company of four other major factors: phonemic awareness, phonics, vocabulary, and comprehension, the so-called "Fab Five." One very interesting outcome

[233] Allington, "Oral Reading," 853-855; Grabe, *Reading in a Second Language*, 105.

is that fluency has come to be defined in terms of oral fluency, because when a reader can engage in accurate reading with good expression, comprehension is also implied.[234] Fluency in this conception—the natural, automatic, easy and expressive way in which a strong reader reads—is the very essence of musical expression. In music, hesitancy or a lack of direction to a musical line is often heard as a lack of musicality. The typical music curriculum, rightly or wrongly, leaves such concerns of musicality up to performance classes, which for singers include choral rehearsals, private lessons, and opera workshops and productions. These loci of learning in many cases need to increase their attention to how musical performance is integrated with literacy, as the third chapter will discuss. But curriculum developers must consider along with all the pressing concerns of budget, staffing, sequencing, etc., that developing fluency in music reading takes more time than is typically allowed, requires skillful teachers with more experience and expertise than are typically assigned, and ideally would precede music theory instruction.

Many music theorists would disagree with Brink that fluency is an unimportant dimension to musical literacy. Brink herself seems to renege her own position, recognizing that the score has become too important if there is no concern for the sounds of music. She admits that reading procedures stand in a different relationship to the objective of aural comprehension than listening procedures. She has to acknowledge, even with her cognitive/structural bias, that "reading procedures are invaluable tools for developing and demonstrating aural imagery for musicians who must work from scores"

---

[234] Neil J. Anderson, "ACTIVE Reading: The Research Base for a Pedagogical Approach in the Reading Classroom," in *Second Language Reading Research and Instruction: Crossing the Boundaries,* ed. ZhaoHong Han and Neil J. Anderson. (Ann Arbor, University of Michigan Press, 2009): 129.

and that only when one can audiate a score is reading knowledge properly musical knowledge in the fullest sense.[235] In terms of pedagogical process, the chief question therefore is not one over the other, but by what strategic order do both oral reading, (i.e., audiation and fluent sight-singing), and analytical reading (i.e., reading for comprehension), develop to their maximum potential for each musician. The literature makes very clear that to precede audiation with theoretical understanding is unwise. Gordon uses the analogy of "copying a text on a typewriter which is designed for a language which the typist does not understand."[236] By the same token, he asserts that if instrumentalists can audiate, they will be able to transpose without learning music theory at all. "For most efficient learning, students should not be introduced to theoretical understanding until they have achieved all the previous levels of discrimination and inference learning." He actually goes so far as to say it is harmful for a student to be exposed to music theory before they have achieved audiation skill at least at the oral/aural verbal association and partial synthesis levels of learning.[237] Kenneth Phillips appeals to the analogy of learning to speak before learning to read: people cannot concentrate on both new visual events and new aural events simultaneously.[238] Rupert Thackray reflects, "Intellectual understanding, divorced from sound, has assumed such prominence that the actual hearing of music is often excluded… it is still possible to pass examinations in

---

[235] Brink, "A Cognitive Approach to the Teaching of Aural Skills Viewed as Applied Music Theory," 96.

[236] Gordon, *Learning Sequences in Music*, 25.

[237] Ibid., 75, 78.

[238] Phillips, "Teaching Singers to Sight Read," 32.

harmony without being able to hear what is written… analysis is done by the eye rather than by ear."[239] This kind of non-aural notational production Gordon calls, "faking,"[240] unfortunately a mode of survival for which many students opt in favor of passing their theory courses when, despite the strong recommendations of centuries of research and practice, they continue to be structured as the precursor to aural skills.

Lack of time on task

The last detrimental aspect of current approaches to music literacy instruction is not a faulty teaching strategy so much as a non-strategy. The skill of literacy takes time to develop. The time spent reading music represents for many music students a very small percentage of their total work. Curriculum developers have grappled with this problem over and over. It is common for courses in aural skills, so crucial for a student's development, to earn a student one credit, admittedly falling far short of what would be required for achieving strong musical literacy.[241] An equal challenge for administrators and curriculum developers is making sure that skilled and qualified literacy instructors are assigned to teach carefully planned materials, rather than inexperienced graduate students sincerely giving it their best shot. Time on task is essential: "Even a trained pedagogue cannot achieve desirable goals in one hour per week."[242] Damschroder testifies from his years as a theory instructor:

---

[239] Rupert Thackray, *Aural Awakening*, (CIRCME, School of Music, University of Western Australia, 1978), 3. Also Gordon, *Learning Sequences in Music*, 77.

[240] Gordon, *Learning Sequenes in Music*, 59.

[241] Foltz, "Sight Singing in Relation to the Total Theory Program," 4.

[242] Fletcher, "Music-Reading Reconsidered as a Code Learning Problem," 95; More, "Sight-singing and Ear-training at the University Level," 18, 21.

> Students in my course earn what is probably the national norm—three credits in theory and one credit in ear training and sight singing. Yet certainly attaining mastery of skills is neither one-third as challenging nor one-third as time consuming. It is significantly more. As a result, students tend to lag in skills proficiency and reach the termination of their undergraduate course sequence in a significantly lopsided state that favors the mental as opposed to the sound oriented components of their training.[243]

He also admits that often fewer students are detained from proceeding to the next level than should be detained, because instructors fear the protests of their colleagues and superiors. But his admission that the curriculum design communicates to students that literacy is less important than theory gets more to the heart of the issue: how can students rightly be penalized for fulfilling the curriculum as it was laid out for them?

This is not different for verbal language facility or for linguistic literacy development. The best predictor of both language facility and reading facility is time on task.[244] Sloboda observes "Studies on skill… have taught we should expect significant changes in the structure of skill beyond mere proficiency. There are practitioners who have earned the title 'master' by virtue of their experience and excellence. A factor correlating very strongly with mastery is quite simply the time spent practicing the skill in question."[245] In music education, one has only to ask any music student if their practicing is ever finished to realize just how much time is spent practicing. But what percentage of that practice time is dedicated to the mastery of literacy skills is up to the

---

[243] Damschroder, "Flexibility in the Theory Classroom: Strategies for the Management of Diversity," 185.

[244] Nick C. Ellis, "Memory for Language," in *Cognition and Second Language Instruction*, ed. Peter Robinson (New York: Cambridge University Press, 2001): 63; Jan H. Hulstijn, "Incidental and Intentional Learning," in *Handbook of Second Language Acquisition*, ed. Catherine J. Doughty and Michael H. Long (Malden, MA: Blackwell Publishing, 2003): 266.

[245] Sloboda, *Exploring the Musical Mind*, 38.

standards set forth by teachers, both literacy teachers and applied music teachers. Too many voice teachers neglect the cultivation of literacy in their work with singers, perhaps assuming the instruction in aural skills and theory classes will suffice. This will now become the subject of the final chapter of this paper.

Lack of literacy reinforcement in applied voice lessons

In an effort to understand the particular problems singers face in becoming musically literate, music literacy education also needs to be investigated within the context of applied voice lessons, both pre-college and college. Many college voice teachers expect and even demand literacy of their students; students may be required to pass so-called "barrier" exams before they are allowed to enter upper level voice instruction. But voice teachers may at the same time lack confidence and skill at instructing literacy. However, voice teachers actually stand in a better position than their theory colleagues to powerfully influence students' motivation toward becoming musically literate. Kate Covington observes that students often have to make an enormous adjustment when they enter college music programs. Their pre-college experiences are primarily performing, listening to, and responding to music. When they enter the theory classroom, this cherished art form that previously brought so much pleasure is approached analytically, sequentially, and logically. She recommends that sight-singing be taught in semi-private lessons so as to address the specific challenges of each student,[246] a suggestion solidly in line with general literacy pedagogy, but one that is unlikely to be incorporated by theory-driven literacy instruction. Applied music teachers on the other hand, and specifically for this paper voice teachers, occupy just such a

[246] Covington, "An Alternate Approach to Aural Training," 12, 15-16.

position to address the individual literacy needs of each student. Just as teachers of music theory must consider what is gained by achieving only a low level of literacy, voice teachers must consider what is gained by coaching and enabling beautiful vocal production without making musical independence an equally essential outcome for their students. Furthermore, studies have indicated that students need encouragement to transfer the knowledge gained in the sight-singing classroom to other environments, so that knowledge and skill become more generalized. Without encouragement and assistance to make this transition, the skills tend to break down.[247] The voice teaching studio will be reviewed with two aims: to ascertain voice pedagogy practices that may unwittingly discourage literacy development, and to suggest how voice teachers might foster and encourage literacy in their students while not diminishing the other crucial aspects of their work that students need and expect from them.

[247] Lyle Davidson and Larry Scripp, "A Developmental View of Sight Singing," *Journal of Music Theory Pedagogy* 2/1 (1988): 21.

CHAPTER THREE: MUSICAL LITERACY IN THE PRIVATE VOICE STUDIO

The private voice studio represents the central locus for singers' learning, and thus a primary influence for the formulation of that which they perceive to be most important in their musical training. Voice teachers' standards and expectations define vocal excellence for students, and as a result motivate the kind of work that is necessary for them to excel. If voice teachers truly consider musical literacy to be as essential a skill for their students as memorization, they must not only make sure that curricular requirements reflect that, but must be prepared to do their part to teach illiterate students how to read. Otherwise, the importance of musical literacy receives lip service by a singer's most powerful influence, but the student realizes that in terms of fulfilling curricular requirements, memorization is much more important than literacy and will revert to rote learning in order to meet memorized performance deadlines. A demonstrated concern for literacy is perhaps the strongest practical way for a voice teacher to ensure a process-centered pedagogy that goes deeper than producing individual performance products. The rationale that defers the teaching and cultivation of musical literacy entirely to their theory colleagues not only does not seem to be effective for teaching singers to read. It also precludes the very knowledge by which the curriculum requires students to learn to read: that literacy generates both better musicianship and better performance.

It is interesting to note that the earliest discourses of both vocal pedagogy and ancient music theory predate the proliferation of printed music, and thus at one time

neither discipline centered on written scores at all, but on aural phenomena.[248] As printed music literature has become the normative central focus of higher music education, music theory as a discipline has evolved to be thoroughly rooted in and to a large degree defined by notated music, while vocal pedagogy has maintained a strong orientation toward an aural/oral tradition.[249] Practically speaking, there will always be a strong oral component to vocal pedagogy because it is centered in sensory-dependent and experiential categories, not declarative knowledge. Even modern singing students learn progressively difficult vocal techniques and develop a deeper sensitivity to sensations and sounds, relying on the correction and aural guidance of the teacher each step of the way, in much the same old-fashioned way as an apprentice learns from a master. However, failure to incorporate printed music into this context is a serious oversight. Ironically, although notation emerged first in vocal music, it is not clear that singers of that music learned the chants by reading those early scores. The question of why this music began to be written down in the first place is an interesting and difficult issue to explore. Much of the actual practice of teaching, learning, and performing of early chant is a mystery to the modern reader, because the extant notated music from that time, presumably useful to the singers who read it, is no longer understandable. One theory is that early notational practice was not developed so much to help singers learn pieces as it was a mnemonic device to help

---

[248] Granted, the nature of concern over aural phenomena has evolved considerably with musical practice. With the emergence of opera, the concern over the aural sounds singers produce became more concerned with the quality of the vocal sound than that likely exerted by teachers of chant to choir boys. But for voice teachers the aural focus vis-á-vis notated music remains common.

[249] Edward Foreman, *Authentic Singing*, vol. 2, (Minneapolis: Pro-Musica Press, 2001), 9.

them to remember the music they had learned orally.[250] In practice, this still describes the way many singers relate to printed music: as a visual reminder of what they have learned orally, be it via YouTube, a favorite recording, or an accommodating accompanist.

The vocal pedagogy literature spends a disproportionately small amount of time discussing the cultivation of literacy, even while occasionally acknowledging that it is important. It is often completely absent, which does not necessarily imply that it is unimportant as much as it is assumed. However, Christy's comment that "Today an adequately equipped singer must be a musician as well," by which he means one must have the ability to read rhythms and pitches accurately, have enough familiarity with the piano to at least play harmonies, and have basic knowledge of music theory and historical stylistic periods of vocal literature, leaves the reader with the distinct impression that at one time these skills were not required of singers.[251] Kagen speaks the most directly to the importance of literacy:

> It is true that many a fine singer has learned to sing without ever having mastered even the elements of musical notation. The mastery of musical notation is as important to a performing musician as a mastery of the elements of reading and writing is important to anyone else. One *could* do without it, it is true… One can imagine an actor, superbly gifted and with the possession of an exceptional memory, of being illiterate. One can imagine a singer, equally superbly gifted and possessing an exceptional musical memory, of being musically illiterate. The advantage of being illiterate, however, escapes me in both instances.[252]

---

[250] Ibid., 8, see also vol. 1, 99, 120. Foreman points out that prior to printing, memorization served an important function to preserve literary and musical artifacts; it was not merely a convention of public performance.

[251] Van A. Christy, *Foundations in Singing: A Basic Textbook in the Fundamentals of Technic and Song Interpretation*, 4th ed. (Dubuque, IA: Wm. C. Brown Company Publishers, 1979), 10-11.

[252] Kagen, *On Studying Singing*, 25-26.

Caution with memorization requirements

Modern vocal teaching typically places a stronger emphasis on memorization than on literacy. In terms of curricular vocal requirements, memorization is non-negotiable, whereas literacy can, practically speaking, end up being perceived by students as optional. In terms of training singers, this is an understandable bias. Professional singers must perform from memory. While playing from memory is also standard practice for many solo instrumental musicians, engagement with the audience has always been a stronger aspect of singing than instrumental playing, by virtue of the singer's position to the audience. A singer does not sit behind an enormous instrument, nor do they even have a little flute or a violin to absorb their focus and that of the audience. Singers in a recital stand fully exposed before the audience, instrument and instrumentalist in one. And of course, a singer in a theatrical production must be fully engaged in the character's actions and reactions in the drama. So it is understandable that singers are taught the importance of internalizing music, because that skill is essential to their success as musicians. However, if literacy is also essential to a singer's overall development as a musician, as many if not most voice teachers would agree that it is, this also must be modeled as an essential skill in their training. If the importance of literacy is not a part of student's curricular experience of applied instruction, it seems likely that there will continue to be an alarmingly large proportion of musicians who find their aural skills training largely irrelevant to their subsequent engagement with music.[253]

---

[253] Gary S. Karpinski, "Reviews of Recent Textbooks in Theory and Musicianship: 3. Aural Skills," *Music Theory Spectrum* 15 (1993): 254. See particularly Karpinski's review of George Pratt's *Aural Awareness: Principles and Practice.*

Motivation, as previously mentioned, has been theorized at great length in language acquisition and also in reading studies. On the other hand music psychology has focused on motivation to learn and master the playing of a musical instrument, or even as a tool to overcome performance anxiety, but motivation for music literacy has been largely ignored.[254] Kodály recognized its importance though. He addressed the Hungarian Music Academy in 1953 with these words:

> Today there is much talk of overburdening the students. It is true that the musician finds burdensome the learning of subjects whose direct use in his career he cannot see. If he realized, however, how much easier it is to learn every *music* subject, and how much time is won if he first trains himself to be a quick and sure reader, he would not rest day or night until he had achieved this. To teach a child an instrument without first giving him preparatory training and without developing singing, reading, and dictating to the highest level along with the playing is to build upon sand.[255]

It is the old adage: Give a man a fish and you feed him for a day; teach a man to fish and you feed him for a lifetime.

One of the most powerful tools the voice teacher has at her disposal is a position of influence from which to motivate students to learn to read. Motivation is a complex concept with many expressions and applications, not all of which provide equal insight into pedagogical practice. Most basically, motivation is not simply a personality characteristic that some have in larger measure than others. A learning environment has an enormous impact on a student's motivation to learn, and teachers must take their share of responsibility for seeing that students are motivated to learn what they need to learn in

---

[254] Susan O'Neill and Gary E. McPherson, "Motivation," *The Science and Psychology of Music Performance*, ed. Richard Parncutt and Gary E. McPherson, 31-46. (New York: Oxford University Press 2001). This is an in-depth article on motivation in music education, without so much as a cursory concern with musical literacy.

[255] Kodály, "Who is a Good Musician? in *The Selected Writings of Zoltán Kodály*, 196.

the environments they create.[256] Elements such as instructional clarity, good relationships with students, a pleasant and supportive classroom atmosphere and fostering a learner group that supports each other's success have all been demonstrated to strongly predict motivation for learning.[257] The most effective teachers use many motivational mechanisms constantly, so the environment overflows with attempts to motivate students.[258] Such an environment is not built in a day, but as it were "one grain of trust and caring at a time."[259] Counterintuitive as it may seem, research has shown that grouping students together in terms of greater and lesser ability does not support positive learning environments, but weakens them. Teachers do a better job of maintaining high expectations of all their students when there is a mixture of abilities.[260] The voice studio with its spectrum of freshman to graduate students, music education, music therapy, and music performance majors, is a perfect example of such a mix.

If teachers assume that students come with all the motivation they need to learn the material, they will be blind to the very factors they may need to influence in order for the student to succeed.[261] Instrumental motivation, linked strongly with extrinsic motivational factors, involves external motivators such as getting a better job, a more prestigious position, or having "an edge" in one's résumé. In educational environments,

---

[256] Wigfield, "Reading Motivation," 66.

[257] Dörnyei, *Motivational Strategies in the Learning Classroom*, 26, 31.

[258] Grabe, *Reading in a Second Language*, 175.

[259] Dörnyei, *Motivational Strategies in the Learning Classroom*, 25.

[260] Ibid., 35.

[261] Cook, *Second Language Learning and Language Teaching*, 138.

grades and peer approval provide this kind of demonstration of competence and success. Integrative motivation on the other hand, aligned with intrinsic aspects of motivation, is that which arises from the student's own desires, beliefs, and values. It is more powerful and longer lasting than extrinsic motivation, and thus a teacher does well to attend to it. Intrinsic motivation typically aligns more with pleasure, and extrinsic motivation with achievement, but in actuality they are entwined.[262]

Various scales have been developed to measure motivation in research studies, but few of them translate into actual pedagogical strategies.[263] As applied to second language acquisition, motivation used to be characterized in terms of individual learners' attitudes toward the other language group, that either positively or negatively influenced their success in learning the language. Robert Gardner, who first developed motivation theory as a way of understanding individual differences in the success of learning a language, later nuanced it to include the teacher's structuring of the learning environment.[264] Since the world has become more global and the ability to speak more

---

[262] Sloboda, *Exploring the Musical Mind*, 307-308.

[263] See Charles S. Claxton and Patricia Murrell, *Learning Styles: Implications for Improving Educational Practices,* ASHE-ERIC Higher Education Report No. 4. (Washington D.C.: Association for the Study of Higher Education, 1987), 43-44. One good example would be the Eison Scale, developed first in 1979 and then tweaked in 1986. This scale focused on measuring students' motivation in terms of Learner Orientation (LO) or Grade Orientation (GO). The ideal student according to this scale was highly self-motivated, requiring little in the way of external motivators. The study revealed four basic patterns of college student:

High LO – High GO (pre-med, pre-law)
High LO – Low GO (in school for enrichment and personal growth)
Low LO – High GO (primary interest in good grades)
Low LO – Low GO (in school to have a good time and avoid getting a job)

[264] Compare Robert C. Gardner, *Social Psychology and Second Language Learning: The Role of Attitudes and Motivation* (London: Arnold, 1985); Robert C. Gardner and Peter

than one language is often pursued in the interests of breadth and well-roundedness, negative attitudes toward the new culture and language have not been as pronounced as they were for Gardner in Canada in the 1980s.[265] Nevertheless motivation is still considered a crucial factor in both second language acquisition and in reading. Both of these areas have applications to music literacy education, and can guide teachers in the creation of instruments for students to increase not their performing ability or their self-confidence when they walk on the stage as they have often been applied, but rather their motivation to learn to read.

As mentioned earlier, Dörnyei's nuancing of Gardner's concept of motivation with "the construction of the ideal self" in second language acquisition has excellent application to music literacy pedagogy. William Grabe also theorizes motivation specifically for reading. Grabe catalogues five main theories of motivation for reading, each comprising various proportions of intrinsic and extrinsic motivation. The "Achievement theory," similar to Dörnyei's theory of ideal selves, includes the "conflict" between desire for successful outcomes and avoidance of failure. "Attribution theory" seeks to pinpoint causes of success or failure. "Social-cognitive theory" is strongly

---

D. MacIntyre, "A Student's Contributions to Second Language Learning. Part I: Cognitive Variables," *Language Teaching* 25 (1992): 211-220; and Gardner and MacIntyre, "A Student's Contributions to Second Language Learning. Part II: Affective Variables," *Language Teaching* 26 (1993): 1-11.

[265] Kimberly Noels has further developed Gardner's motivational distinctions, separating classroom-learning motivation from that which proceeds from ethno-linguistic identities in order to better accommodate the different profiles of language learners. See Kimberly Noels, "New Orientations in Language Learning Motivation: Towards a Model of Intrinsic, Extrinsic, and Integrative Orientation and Motivation," in *Motivation and Second Language Acquisition*, ed. Zoltán Dörnyei and Richard Schmidt. (Honolulu, HI: Second Language Teaching and Curriculum Center, 2001): 43-68.

dependent on tasks. "Goal-orientation theory" distinguishes between "mastery goals" which reflect the desire to better oneself, and "performance goals" which focus on outperforming others; each accomplishes different effects. And finally, "Self-determination theory" is characterized most strongly by intrinsic motivation principles and focus on cultivating environments that best support the individual and his/her goals. Each of these theories has been used specifically to understand how students find the motivation to learn to read, and all of them explain parts of the process to some extent.[266] Grabe's point is to draw attention to the importance of motivation, as well as its complexity for the development of reading. Students who demonstrated a higher motivation to read also performed better in reading comprehension. Particularly in L1 settings, studies have demonstrated close associations between both intrinsic motivation and reading amount, and between intrinsic motivation and reading enjoyment.[267] Grabe also cites research indicating that throughout a student's education, while intrinsic motivation typically decreases, extrinsic motivation tends to increase, which he notes is not a positive exchange. Similarly while mastery goals (i.e., desire to learn) decrease, performance goals (i.e., get the job done, work for external recognition) increase.[268] The obvious conclusion is that there is too much at stake for teachers not to take more care to cultivate motivation in their students.

Both Dörnyei's and Grabe's insights help to explain why a singer's process of learning to read music may languish if they perceive no relationship with their strong

---

[266] Grabe, *Reading in a Second Language*, 176-178.

[267] Ibid., 182, 185.

[268] Ibid., 185-186.

intrinsic motivation of becoming a professional singer. Comparatively, singing and performing are often more strongly aligned with pleasure and are more likely part of a student's intrinsic motivational framework than, for example, theory or aural skills. However, their vision of themselves is unrealistic if it contains no vision of how their future depends on whether or not they can read music. Theory and aural skills classes may challenge them intellectually, and they may try hard to do well out of a desire for a good grade point average, but the kind of motivation that results is much less compelling or sustainable than recognizing that their ideal performing selves depend on learning to read. It is one thing for a voice teacher to assert that they need to learn to read music; it's another for a voice teacher to create it as a non-negotiable, unavoidable aspect of learning to sing, structured as a curricular prerequisite or at least co-requisite with performing, and unable to be abandoned until it is mastered. This does not entail that voice lessons must be less satisfying nor that they must abandon their traditional focus on the student's vocal quality, technical skill, and performance ambitions, but it does mean that voice teachers may have to increase their attention to the process by which students learn to perform their music, rather than strictly evaluating the performance products.

What Do Voice Teachers Do?

Even as it was beneficial to contextualize music literacy in terms of what music theorists do, it may be helpful to do the same for voice teachers. What do voice teachers do? The answer is perhaps historically more homogenous than for theorists, given that the aural focus of voice lessons has not changed substantially over the centuries. However, Guido's developing of "The Hand" in the eleventh century, stemming as it did from his concern with teaching his singers to read music, would fit under a performance pedagogy

rubric in many music theory teachers' minds, but would for many modern voice teacher's belong to the purview of a music theorist. This fact reveals that greater shifts may have occurred in voice pedagogy than first glance makes apparent. Was Guido a voice teacher or was he a music theorist?[269]

Leaving Guido's Hand out of the discussion for the moment, a voice teacher's job is both simple and infinitely complex. Simply, they teach people how to sing. Modern voice teachers help people to make the most resonant, well-projecting, and beautiful vocal sounds with the least amount of vocal strain, particular concerns with which, admittedly, Guido would have had little reason to concern himself. In terms of developing a student's vocal quality in this way, the voice teacher's concern is almost entirely on aspects of sound that are not notated. Although these vocal elements are not symbolically represented, the nuances are audibly and kinesthetically recognizable and repeatable, and vital for a student to gain awareness of and cultivate as default modes of sound production. In order to accomplish this, the teacher uses much repetition and demonstration, and seeks to enable students to create their own perceptive categories for the recognition of the sounds and how to make them so they can reproduce them at will independently.[270] While this job is by no means easy, thus far the voice teacher's job is comparatively simple because it does not involve music reading.

---

[269] Given his other theoretical writings, most importantly *Micrologus*, Guido may be a rare anomaly: both a music theorist and a voice teacher. Certainly by the standards of today's voice teacher, he aligns more clearly with the profile of a theorist, but the fact that he cared enough about teaching singers to read to actually develop pedagogical strategies for accomplishing literacy earns him an award of distinction in both categories.

[270] Sloboda, *Exploring the Musical Mind*, 160.

The complexity begins because voice teachers do not teach these musical nuances in a vacuum. If they do, it becomes obvious when their students perform that they are merely executing a series of beautiful pear-shaped sounds, not embodying the sensitive blend of literary and musical meaning that is the essence of the vocal art. Rather, voice teachers teach these essential and un-notated aspects of singing in the context of teaching students to value, interpret, and effectively perform a large and diverse body of vocal repertoire, all of which exist in musical scores.[271] This involves a host of subskills, not the least of which is teaching students how to correctly pronounce Italian, French, German, Latin, Spanish, and Russian, to name only the central languages of the repertoire. The truly overwhelming diversity for a voice teacher stems from the infinite blends of unique physical instruments, personalities, specific interests, musical backgrounds, and incoming knowledge their students provide. This variety is not less for theory teachers, but voice teachers have in their favor individual instruction, so they are better able to tailor lessons to the individual needs of the student.

When a voice teacher acquires a freshman student with weak reading skills, they have two options. Either they can begin their course of study with a focus on teaching them how to read as they teach them how to sing, and gradually see that focus pay off and shift to other aspects as they become more literate. Or they can content themselves with rote learning for the duration of their program, and see them graduate with a great voice and poor reading skills. The assumption that someone else will teach them to read

---

[271] The vast majority exists also in recorded form, of course, but if a voice teacher aims to produce students capable of greater depth than parrots, whose charm is to imitate the sounds they hear, they must help students put recordings in their proper place. Recordings have real pedagogical value for literate, independent musicians, but using them to learn pitches and rhythms turns them from a pedagogical asset to a handicap.

has been shown to be unreliable. Even if a colleague does uphold the high version of literacy in aural skills, if the voice teacher does not help the student to apply that knowledge to the work of a singer, the knowledge often fails to transfer.

There are a few essential points a voice teacher must establish with the student. The first is that the student must desire to learn to read. If it does not matter to them whether they learn to read music, they will not have the motivation to do the work they need to do to succeed. The teacher can help the student's motivation, both by establishing external motivators, and by feeding internal motivators. For a student who cannot read, the most basic external motivator is their applied lesson grade. In that first year, improvement in reading ability should matter more than memorized repertoire performance accomplishments. By establishing curricular demands around the student's greatest need, their learning process is respected and the grade is more likely to align with the student's competence beliefs. In reading pedagogy, this is an example of "domain specific" reading, which studies have demonstrated motivates reading more successfully than general reading.[272] Other external motivators that can be encouraged by the voice teacher are the establishment of goals apart from earning a grade. For example, entrance into the best choral ensembles depends to a large extent on reading ability. Nurturing that as a goal not only supports one's choral colleagues, but also puts the student in an environment for learning harmonic aspects of reading, which are more difficult to teach in individual voice lessons. Students with strong opera aspirations may be more motivated to learn to read music if strong reading skills were made a pre-requisite for participation in opera productions. Both of these examples imply a department-wide

[272] Wigfield, "Reading Motivation," 61.

cooperative concern for literacy that may itself require some cultivation, but such efforts cannot help but produce positive change in the quality of the students' education, not only as evidenced by their skills upon graduation, but also by improving learning environments throughout the whole department.

Internal motivators more than anything require education. In order for voice students to arrive at future self-concepts that are worth striving for, they must envision not only that they can be independent learners, but that they must. It may not have dawned on them that it was even possible for them to pick up a score and read it without knowing it in advance, or without having someone feed it to them by rote. They may be operating under the illusion that if their voices and performing abilities are good enough, they will not need to know how to read. A voice teacher plays an important role to expand a student's idea of what being a professional singer involves, and cultivate in each one a desire for versatility that does not diminish their most cherished ambitions, but allows a vision for other skills to grow alongside. If they happen to have general education goals, the stakes are even higher, for they have the potential to turn their experience of learning to read music into teaching practices that will help to raise pre-college literacy levels, and bring already musically literate students into music programs.

Of course voice teachers face obstacles to overcome in incorporating literacy into applied voice study. Impatience would be one, either within themselves or on the part of their students, as an enormous body of literature begs to be explored. But if the student does not have the skills to explore that literature independently, there seems small advantage to enabling him or her to effectively parrot representative selections. Music educators everywhere must keep their sights long, structuring the learning in small steps

and then relishing the rewards of music learning independence as will inevitably add up over time.[273]

Such goals have everything to do with helping students establish productive practice routines. Practice strategies can be defined as "thoughts and behaviors that musicians engage in during practice that are intended to influence their motivational or affective state, or the way in which they select, organize, integrate, and rehearse new knowledge and skills."[274] Practicing itself may be new for students, and in some ways that is easier to work with than entrenched poor habits of practicing. But many voice teachers will admit that the single most important skill they impart to their students is teaching them how to practice. One of the most important negative practice habits to counter with respect to literacy development is "plunking," a common habit among singers whereby they try with varying degrees of success to sing while they play their melodies on the piano. Even if they have good piano skills (which many do not), this is only marginally better than learning by imitating a recording, another common habit that students have for learning pieces.[275] These concerns open a discussion of how a singer learns to cope with the lack of a physical domain for pitch. As has already been established, playing the piano well is not necessary to becoming a fluent music reader, although a singer without perfect pitch will need some way to provide a reference point

---

[273] Phillips, "Teaching Singers to Sight Read," 33.

[274] Harald Jørgensen, "Strategies for Individual Practice," *Musical Excellence*, ed. Aaron Williamon. (New York: Oxford University Press, 2004), 85.

[275] W. Stephen Smith, *The Naked Voice: A Wholistic Approach to Singing*, (New York: Oxford University Press, 2007), 142. Although there is much to admire in his book about teaching singing, Smith actually recommends the decidedly un-holistic practice of plunking for the phase of learning repertoire he calls "getting the pitches in the ear."

for pitch. Learning to break the habit of plunking will require some substantial alternatives that the voice teacher must provide if they are going to encourage success.

Overcoming an Internal Physical Pitch Domain

Guido's Hand and solfeggio hand signs

Guido's Hand now enters the discussion again, not because it should be reinstated as a teaching tool, but by recognizing what caused Guido to develop it (or at least to use it as he did), and taking to heart his effort to help singers overcome pitch ambiguity, teachers can become a part of helping singers form more capable ideal selves. The challenge is not ostensibly different today than it was in the eleventh century. Without negating the fact that Guido's concept of pitch was substantially different than the modern one, Kenneth Phillips reflects that Guido's taking solfège syllables and linking them to the mnemonic device of the diagram of a hand demonstrated his understanding of the value of having a physical expression for pitch where otherwise there was none. "Pupils thus learned to sing the various intervals of the system as the teacher pointed with the index finger of the right hand to the different places on the open left hand."[276] Kate Covington describes Guido's Hand as channeling his frustrations positively "by devising a kinesthetic representation of pitches, in the hope of improving his choir's accuracy in singing."[277] A similar device was developed centuries later, again in conjunction with solfège syllables. This time English music educators Sarah Glover and John Curwen established hand signs to represent the notes of the scale. Where Guido's hand accommodated not only solfège syllables, but also specific pitches across the entire

---

[276] Phillips, "Sight Singing: Where Have We Been? Where Are We Going?" 11.

[277] Covington, "An Alternate Approach to Aural Training," 5.

gamut, Glover and Curwen's hand signs from 1862, after keyboards were accessible to the working class, operated more thoroughly on a moveable-DO concept, whereby singers visually and kinesthetically reinforced awareness of every pitch's relationship to the tonic in whatever key they happened to be singing.[278] Kodály used both moveable-DO solmization and the hand signs developed by Glover and Curwen. He specifically warned both singing teachers and choral conductors against an over-dependence on pianos, both because they fail to develop responsibility in singers for singing in tune, and because even the best tuned piano is tempered tuning, which does not translate well into acoustic tuning for part songs.[279]

During the so-called *Bel canto* period of singing history, teachers adopted the syllables of solmization to construct vocal exercises for their students, called *solfeggi* or *vocalizzi*.[280] According to Domenico Corri (1746-1825), one of the students of the famed teacher, Nicola Porpora (1686-1767), the practice of *Solfeggio* was deemed a useful practice, but not until the singing student had attained correct and perfect intonation, which he did singing on an [a] vowel. Corri specifically cites his teacher "If an interval cannot be executed with precision by uttering the letter [a] no greater assistance will be derived from sounding the syllables Do and Re…. it is supposed that the syllables convey the idea of the distance of the intervals, but they can no more give this knowledge than

---

[278] Houlahan and Tacka, "Sound Thinking: A Suggested Sequence for Teaching Musical Elements Based on a Philosophy of Zoltán Kodály for a College Music Course," 93.

[279] Zoltán Kodály, *Let Us Sing Correctly!* (London: Boosey & Hawkes, 1963), preface.

[280] Smith, "A Comparison of Pedagogical Resources in Solmization Systems," 4.

lines drawn on paper could instruct anyone in the steps of dancing."[281] This logic is perfectly consistent with the fixed-DO system of solmization, which does not distinguish the notes A ♭ , A, and A#, for example, with any other syllable than LA. The exercises Corri writes out, (which incidentally, include elaborate piano accompaniments), clearly demonstrate that fixed-DO is the solmization system to which he is referring.[282] In fixed-DO, the tuning of the particular version of the three possible As must be executed entirely by the singer's ear, and is one of the reasons why music educators in America have advocated for moveable-DO systems, precisely because they are better able to instruct the ear to encourage better tuning. Whether or not fixed-DO accomplishes its claim to train perfect pitch—as Smith implies, others have claimed, and none have proved—is beside the point. It does seem clear that moveable-DO does a better job by its chromatically variable syllables and precise pitch identities, of helping the ear to become attuned to the patterns of whole tones and semitones that comprise the system of tonality in which a great deal of the music we study was written.

Considering that voice teachers of the eighteenth century found even fixed-DO solmization useful to train singers (albeit with a strong reliance on the keyboard), how much more is moveable-DO solmization and its hand signs a tool for voice teachers to free singers from an unnecessary reliance on the piano? If the first stage of learning to read is to establish a strong aural knowledge of tonal patterns, then the tonal patterns of vocal exercises, executed variously according to solmization syllables, pure vowels, and vowel-consonant combinations, seem an excellent place to start. To disregard such a

---

[281] Edward Foreman, *The Porpora Tradition* (Champagne, IL: Pro-Musica Press, 2001), 34.

[282] Ibid., 36ff.

practice on the basis that is easier to use the piano, amounts to what language acquisition theorists have described as "just 'getting the job done' at the expense of the central purpose of pedagogy: improving target language ability."[283] If voice teachers are content to let poor readers just continue to imitate sounds without understanding them, their pedagogical ambitions are as limited as those of their colleagues in theory classrooms who do not regard a high view of literacy as essential. Pattern recognition is actually much more important than individual pitches for learning to read. The basic units of communication or "phonemes" for the singer are not single pitches. Singers do not hear a flat on the fourth degree of the scale. They hear the patterns of tonality that occur in the melodies of their repertoire and even in their vocal exercises.[284] The same potential exists for rhythmic patterns. Reading theorists explain that solving the problem of word recognition requires solving the problem of pattern recognition, a very complex perception problem that often requires individual instruction in order for a teacher to perceive what the precise blocks to perception are.[285] The voice teacher occupies the optimum position to be able to do that beginning with the patterns of vocal exercises which are not notated, progressing in due time to notated literature.

Bodywork and reading

The other primary aspect of equipping students to deal with the fact they have no physical domain for pitch encompasses the voice teacher's concern for awareness of the entire body in singing. A singer's basic identity as instrument and instrumentalist in one

---

[283] Skehan and Foster, "Cognition and Tasks," 184.

[284] Fletcher, "Music-reading Reconsidered as a Code-learning Problem," 80, 83.

[285] Gough, "Word Recognition," 247.

entails some challenging psychological preparation. Much work done in this area—for example, by Alexander technicians, Feldenkrais teachers, Laban practitioners, Yoga instructors, and Dalcroze Eurythmics trainers to name a few—has been fruitfully applied to singing. These programs of bodywork link the workings of the mind with the motions of the body, and attribute greater mental clarity to better use of the body. Most often, practitioners do this kind of work with singers when they are performing music they have already internalized. However, considering that reading music, a largely mental activity, needs to function in complete cooperation with singing, a physical action, this type of bodywork may prove at least as beneficial while people are reading.

Of all the modes of bodywork mentioned above, Dalcroze Eurythmics is most explicitly concerned with actual musicianship, although each of these systems has been and will continue to be successfully applied to musicians' processes in various ways. Émile Jacques-Dalcroze seems to have developed his program with the express intention of improving students' ears, but the way he went about it challenged not the content of musicianship training as much as how students were asked to absorb it.[286] He saw the need for inventing a musicianship training system that involved the body as well as the mind, and his courses always involved movement and creative participation. The point is not that Dalcroze Eurythmics can solve everything. A perceptive and creative teacher will respond to students' mental and physical tension, poor posture, and lack of enjoyment just as he did, and they may find his and others' ideas helpful tools to use. The point is

---

[286] Herbert H. Henke, "The Application of Émile Jacques-Dalcroze's Solfège-Rhythmique to the Choral Rehearsal," *Choral Journal* 25/4 (1984): 11; Robert M. Abramson, *Rhythm Games for Perception and Cognition*, published by the author, 1973. Another good resource, specifically applying Feldenkrais Method to vocal study (although omitting any reference to reading) is Samuel H. Nelson and Elizabeth Blades-Zeller, *Singing with the Whole Self* (Lanham, MD: The Scarecrow Press, Inc., 2002)

that when singers are learning to read, poor singing postures and unmusical ways of thinking and using the voice are not necessary. Concern for these aspects of technical excellence does not need to be postponed until after students are literate. A voice teacher is in a better position to care about the integration technical vocal proficiency and literacy than a theory instructor, but the voice teacher must take care that the student does not perceive reading music to be the obstacle to good singing. The student may get that idea if this kind of bodywork is reserved for works already committed to memory, and is never incorporated into the reading process. Their awareness of their bodies during music reading will not only enable the singing to feel better, but according to the claims of various modes of bodywork, the reading may also be facilitated. This kind of work is also easily incorporated into group settings such as performance classes, where games and interactive exercises are more possible than in the private lesson and can incorporate other aspects of musicianship into reading development.

Verbal language in the singing art

In a paper that is focused on teaching singers to read musical language, their additional necessary skill in verbal language can only rightly receive a respectful nod. This in no way implies that verbal language is less complex, less demanding, or less important than musical language, rather the opposite. It is an enormous subject of its own. As deeply entwined as verbal language becomes with the musical language to which it is united in vocal literature, the initial task of music reading, that is sight-reading, for a singer often involves a separation between the two. This is not a flaw, but a reality of the human mind. Attention is a limited capacity, and any activity that draws on it interferes with other activities requiring it, so attention must be strategically

allocated.[287] Even within a single language, limits on attention stores become an issue, to say nothing of the challenge of mixing languages as one does in singing. One of the premises of this paper is that if singers' musical literacy skills are weak, they cannot rightly reflect on and interpret a composer's choices for setting a text, either rhythmic or melodic, and therefore cannot perform vocal music with linguistic integrity. They may be able to imitate extremely well, but to sing a unified expression of music and poetry convincingly will not be possible. Thus a singer must think of reading in layers, even when the artistic goal is the presentation of a unified whole. The point of this paper is to draw attention to the teaching of musical language, because the verbal language requires so much attention for singers, the musical language can be easily neglected in their training. The musical fluency process improves greatly when at least one of the languages becomes automatic. Given that musical language is the common denominator for all vocal literature, it makes sense that fluency in musical language would form the best foundation from which to pursue fluency in all the other languages involved in singing.[288]

An additional aspect of the integration of verbal and musical language is powerfully represented in Brown's aforementioned speculative theorization of a shared ancestral origin for both verbal and musical language, which has profound ramifications for the teaching of diction for singers. He describes music and verbal languages as both having melodic and rhythmic components, and sees these shared properties as a primary point of convergence between the two systems. "Melody and rhythm are derived from

---

[287] Schmidt, "Attention," 12-13.

[288] Voice teachers' concern for cultivating musical language fluency will inform rationales about what other demands are placed on a student's limited attention store.

three sources: acoustic properties of the fundamental units (pitch sets, intensity values, and duration values in music; phonemes and phonological feet in speech), sequential arrangment of such units …, and expressive phrasing mechanisms that modulate the basic acoustic principles."[289] Brown makes the point that emphasis in "cognitive musicology" on grammatical metaphors has caused a neglect of equally compelling parallels between verbal and musical language at the level of "intonational phrasing." He considers this an egregious oversight, given not only that the majority of verbal language systems in the world are tonal, whereby pitch becomes a semantic unit, but also that even in so-called non-tonal languages, lexical tone inflection has been shown to play just as important a role for the generation of lexical and semantic meaning as for tonal ones.[290] What he terms "the CV boundary," i.e., the consonant-vowel boundary, is insufficient for an understanding of verbal language. The recognition of this limitation should change how voice teachers approach diction, such that learning to decode verbal language is not limited to the consonant-vowel boundary, but is connected with the melodic and rhythmic aspects of the language which are more typically thought to be "musical," but which in fact, are better understood as formal musical instantiations of elements of verbal language itself. Teaching this effectively must necessarily rely heavily on fluent musical literacy.

Automaticity

Given that the reading process for a singer is necessarily layered, even amongst the most skilled fluent musical readers, the question voice teachers must consider is not how to avoid this kind of layered learning, but what aspects of singing must be automatic

---

[289] Brown, "The 'Musilanguage' Model of Music Evolution," 273.

[290] Ibid., 283-286.

in order to produce not only singers with great voices but singers who are great musicians. The process of a deliberate behavior, i.e. a strategy, being converted into an automatic skill is what "acquisition" entails.[291] In second language acquisition, skillful teachers and curriculum developers recognize that in order for language skills to become even partially automatic, students must engage in many activities that allow them to connect declarative knowledge they have gained about structural components of language with procedural communicative activities. At any given point in an individual's development speed and accuracy, the two basic components of fluency, may be poorly reconciled.[292] For example, they may do well on written exams when they have time to think about grammatical structure and composition, but in-the-moment oral comprehension or communication may be poor. Such instances are not reasons to abandon the process of integration on the basis of incompatibility, or grounds to focus on one to the exclusion of the other.[293] Speed and accuracy as well as comprehension are required for language skills to be properly acquired and they typically continue to develop hand in hand as long as they both continue to receive due attention and instruction.[294]

---

[291] Anderson, "ACTIVE Reading," 133-134; see also DeKeyser, "Automaticity and Automaticization," 127-130. It is interesting to note that DeKeyser's assessment of the scholarship on automaticity indicates a shift from its initial conception of it as a function of attention to current concerns with how much memory is required. The reader wonders how much computer science has influenced the development in scholar's thinking.

[292] Hansen and Bernstorf, "Linking Music Learning to Reading Instruction," 21.

[293] DeKeyser, "Automaticity and Automatization," 146-147.

[294] Anderson, "ACTIVE Reading," 130.

This description represents the process of acquiring music literacy skills as well. For singers, the additional, and for many, more central process of learning to sing, is largely procedural, and occupies a great deal of a student's available attention. Therefore if a student is beginning singing lessons without much other musical education, the question is whether they had better become at least somewhat musically literate before having to focus on the procedural concerns of sound production, or if it is possible to acquire both—singing and reading—simultaneously. It seems logical that the respective developments of both skills will necessarily be slower if attempted simultaneously, and that the procedural process of learning to sing would benefit immeasurably from a groundwork of musical literacy skills. Without literacy skills, the learning of repertoire must necessarily proceed by rote learning and imitation, and thus musicianship development is limited to intuition. With literacy skills, the true focus is enabled to be on the development of the voice and the learning of verbal languages in the cultivation of one's repertoire, because reading music requires very little conscious effort.[295] Thus, if music schools accept voice students without literacy skills, and make no provision for them to become literate outside the general music theory laboratory courses, they have rather set themselves up to fail. For a singer with poor literacy and excellent vocal potential, provisional acceptance would better rest on an intensive music literacy development course than a music rudiments course as is typically offered. Most of the content of a music rudiments course could likely be covered in such a class, but the focus would be not just on learning about musical notation and symbols, but on learning to read them fluently.

---

[295] Sloboda, "The Psychology of Music Reading," 10.

Foreign language teachers note that the specific training of automaticity is a neglected component in many curricula as well. Hulstijn suggests two trends that have led to this neglect. First, L2 learners are encouraged to proceed quickly and not reprocess old materials too extensively. Second, a lack of vocabulary is considered a given, and to compensate for that lack, much energy is spent on teaching intelligent coping strategies instead of seeking to improve vocabulary acquisition directly. His conclusion is that such compensation tools are a poor replacement for actually rehearsing previous material and cultivating instant word recognition in the acquisition process.[296]

Integration of music and verbal language

Returning to Pressley's list of practices characterizing good readers, his first two points— that good readers overview a text before reading, and that they exercise differential attention to the information they encounter—really go together for singers. Singers have two texts to read, and both of them should be previewed. Of necessity, particularly for beginning readers, singers will often omit the words for sight-reading and focus on the musical language. When they have become fluent musical readers, they may well be able to omit this step and read the musical language at the same time as reading the words. But fluent readers look over the music they are reading before they begin, ascertaining key(s), chromatic inflections, rhythmic elements and processing the tempo in which all these elements must be delivered. The text is as likely as not to be in another language besides English, which presents a host of other concerns. Even if it is in the singer's native language, a reader must ensure how the prosody works with the rhythm, and understanding the meaning of the words should inform immediately how they

[296] Hulstijn, "Intentional and Incidental Second Language Vocabulary Learning," 281-282.

interpret the melodic lines and rhythms. This same process is crucial for music with foreign language text also, but cannot be done at sight. Preparation requires a thorough investigation using reference helps for pronunciation and meaning. Singers are taught rules of diction to at least enable them to decode the main singing languages accurately, but until they have studied a language extensively, they will not at sight understand the meaning of the text as they do in their native language. Even in one's native language, the language of poetry requires some contemplation to grasp.[297]

Thus, a singer routinely reads in layers. But a performance worth striving for is that which integrates those layers fully: the musical language and the verbal language pondered extensively, united in the singer's concept, and delivered as one. Such a performance is not possible if a performer is only able to imitate the musical language, but is able to give no thought to its significance or to conceive of it as meaningful in itself without the words. None knows better than a composer how the meaning of words can be radically altered by music from their expression in ordinary conversation.[298] In order to understand that and "perform" it, a singer must be proficient in both the verbal language and the musical language, and be able to perceive the principles by which they unite. The very transformation of meaning achieved by the rhythmic and melodic setting of verbal language requires analysis and interpretation. This lack of integration is at the heart of Callaghan and McDonald's critique of music cognition's failure to recognize the nature of the transformation that occurs in language when it is combined with musical language. They recognize the serious flaw in language analysis that focuses on the notated product

---

[297] Text analysis is an important step for an actor also, when no music is involved at all.

[298] Boykan, *Silence and Slow Time*, 12.

without concern for the production and reception, and call for fruitful interaction between theorists and practitioners in this regard.[299] What replaces this kind of complex interpretation in vocal music is an indulgent sort of self-expression whereby the singer emotes out of his or her own imagination of the text, without giving much thought to the evidence the score contains of the composer's musical imagination. The musical language must become as vivid in the singer's mind as it was in the composer's in order for interpretation to proceed with integrity and to feed the singer's deepest artistic capabilities.[300] A singer's highest individual contribution to the vocal art depends on their capacity to understand why the composer has written the music for a particular text as s/he has, including text stress and inflection, musical form, mood, and expressive intent. These are not entirely subjective entities, but are reflected in concrete musical choices, and a singer must be able to independently engage with those choices as s/he reads them.[301]

Rhythm is expressive

Echoing Brown's concern for a fuller recognition of the correlation of verbal and musical languages, the aspect of rhythm most often omitted in the way it is taught is its expressivity. The motion in the music comes from the rhythm, and one of the grave misunderstandings that stems from much rhythm pedagogy is that rhythm is about being mathematically correct—coming in at the right time—rather than its expressivity at an

---

[299] Jean Callaghan and Edward McDonald, "The Singer's Text: Music, Language, and the Expression of Meaning," *Australian Voice* 9 (2003): 42-43.

[300] Thomas Hemsley, *Singing and Imagination: A Human Approach to a Great Musical Tradition*. (New York: Oxford University Press, 1998), 42.

[301] Ibid., 116, 117.

organic level. This fails to recognize that even the delivery of verbal language un-united to musical language is characterized by expressive rhythms (often inscribed by tonal inflection) that go far beyond objective referential meaning in expressing the speaker's thought. One sees this in every day conversation as much as in poetry. A person's mood is revealed not only by what they say but also by how they say it. Rhythm is expressive.

A singer's ability to sing with "a warm heart, a vibrant body, and a cool head" is dependent on such things as the ability to allocate expressive energy and power to singing accurately the expressive rhythm that the composer wrote, instead of feeling that they are solely responsible for conjuring it all from the depths of their emotive beings.[302] Thomas Hemsley suggests three aspects composers give the singer to explore in this regard, and the foundational aspect is rhythmic. First, they take the natural rhythm and inflection of the text and give it musical expression, often giving special rhythmic emphases to particular words. Second, they achieve additional highlighting of textual importance through melodic and harmonic events. And third, the overall mood of a poem is expressed in the combination of these elements in textures, expressive figurations in the accompaniment, tessitura, dynamic coloration, tempo, and a host of other musical elements. A voice teacher must be able to draw a singer's attention to all these aspects, and equip them to engage with them independently. Without a disciplined understanding of, and feeling for this architectural aspect of the composer's work, all a singer's attempts to "be interesting" easily degenerate into self-indulgence.[303] Hemsley quotes composer Reynaldo Hahn, who equated arrhythmic singing to walking on uneven ground: "Nothing

---

[302] Ibid., 42.

[303] Ibid., 119.

gives a greater sense of security, of vigor and ease, than truly rhythmical singing where everything falls into place… There can be no musical delight without rhythm, without cadence, without that pleasant, periodic surge that regulates all the movements of nature."[304]

Interface between Performance and Theoretical Pedagogies

In terms of integrated pedagogical practice, a singer's ability to memorize a text ought not to be separated from their ability to understand its precise musical setting. Theorists, on one side of literacy pedagogy, have no need to memorize music so it does not enter theory pedagogy at all. Singing teachers on the other side, run the risk of emphasizing memorization to the exclusion of literate aspects of singing, leaving singers with little reason to analyze literate components of musical language in their repertoire. Studies such as Jane Ginsborg's, which set out to determine strategies for memorizing music, fall short of a singer's larger goals of musicianship and artistry. Undoubtedly there is value in understanding methods of memorizing vocal music, particularly skill at discerning whether the voice is used more instrumentally, or if the words seem to shape the melody more directly. But to study whether or not words and music should be memorized separately or together strictly on the basis of which one seems to yield a faster, more accurate memorization process does not engage any of the crucial questions discussed above, such as how the words gave shape to the musical elements in the composer's imagination, whether or not the singer understands either the musical or the verbal language, and if the end result is characterized by expressive intensity or

[304] Ibid., 172.

believability.[305] In an article such as Ginsborg's, the reader is left to wonder if she is writing to meet a perceived need in a performance pedagogy that has given up teaching musical literacy, or whether research parameters in cognitive music psychology are simply not engaged with the most urgent needs in performance pedagogy.

The issue here is much greater than whether a single research article, or even a host of research articles accurately or inaccurately reflect performance pedagogy needs. Keitha Lucas makes the astute observation (from the music literacy pedagogy trenches) that "the complex nature of sight-singing development makes the task of the researcher difficult because confounding factors such as perceptual development can be difficult to isolate and control."[306] This hearkens to Michael Roger's call for pedagogical goals to be clarified so that theoretical relevancy to other parts of a student's training may be demonstrated.[307] Music literacy may well be a key link that is currently missing between theoretical and performance music. Stated positively, musical literacy has the potential to substantially strengthen the relationship between theory and performance pedagogy. Negatively, as long as literacy in students remains weak, actual connections between

---

[305] Jane Ginsborg, "Strategies for Memorizing Music," *Musical Excellence*, ed. Aaron Williamon. (New York: Oxford University Press, 2004), 127-137.

[306] Keitha V. Lucas, "Contextual Condition and Sightsinging Achievement of Middle School Choral Students," *Journal of Research in Music Education* 42/3 (1994): 204. See also Quentin Nordgren, "Traditional and Comprehensive Musicianship: A Survey. *American Music Teacher* (January 1980): 34. Lucas particularly notes that while studies are done which catalogue what schools are doing, researchers do not relate this to skills acquisition or literacy/musicianship measurements. One of the reasons for this is that these skills are difficult to quantify, have not been standardized, and the incoming level of skills is too diverse to make any reliable claim about pedagogical practice.

[307] Rogers, "How Much and How Little Has Changed? Evolution in Theory Teaching," 115.

performance and theory will likely continue to fail to materialize. In order for conceptual and empirical research to be able to accurately accommodate the cognitive difficulties individual learners face in actual musical tasks—for example, singers' literacy compared to other musicians—they must be able to assess the precise cognitive demands particular tasks require, so that some measure for overall difficulty of tasks can be properly established.[308]

This is not to say that theory and performance should become one. That in some analyses was the mistaken impulse of the Comprehensive Musicianship movement, that resulted more than anything in placing an overwhelming burden on teachers and students alike. But neither is the answer complacency with a fractured approach to music learning where students are left to ferret out for themselves the connections in various (contradictory) components of their curricula. Gary Karpinski suggests the only viable alternative is an "integrative curriculum."[309] The differences between theory and performance must be respected and upheld in the educational process, but still integrated, so that musicians are properly prepared to absorb the respective bodies of knowledge they each encompass. Thus the final discussion in this paper is the nature of integrated learning in the cultivation of the automatic processes that comprise musical fluency. It falls in this chapter about performance because performers feel the automatic nature of fluency more acutely than theorists as they strive to execute musical language in real time. But theorists stand to benefit just as much as performers from fluent musical

---

[308] Skehan and Foster, "Cognition and Tasks," 188-198. The authors argue this from the language acquisition perspective.

[309] Gary S. Karpinski, "Lessons from the Past: Music Theory Pedagogy and the Future," *Music Theory Online* 6/3 (August 2000).

literacy, as the attention that music theory demands will thus be more available than it is for students who are struggling with literacy.

Integrative curricula

In second language acquisition, linguistic competence is distinguished from linguistic performance, influenced to a large extent by Chomsky's theories. Competence refers to what the speaker-hearer knows; performance refers to the use of language in acts of communication. Ellis suggests that "pragmatic competence" could be a term that recognizes the interaction of these two concepts in terms of the knowledge a speaker-hearer uses successfully in order to comprehend or produce language.[310] Both competence and performance must be considered by second language pedagogical practice if fluency is to be approximated.

Defining competence is not identical for musical language, given that we do not use musical language in the same way that we use linguistic language. Nevertheless, a honing of the concept of musical performance such that it necessitates the inclusion of overall musical competence (including a high level of literacy) seems necessary if literacy is to be upheld on both sides of music pedagogical practice. Some music researchers have practically equated fluent musical reading (i.e. sight-reading) with performance. Thompson and Lehmann define the goal of sight-reading as the ability to create a perfect illusion of a rehearsed performance despite the lack of rehearsal.[311] This seems not only unrealistic, but diminishes the importance of the contemplative internalization process that gives way to the most cherished performance experiences of

---

[310] Ellis, *The Study of Second Language Acquisition*, 970, 975.

[311] Thompson and Lehmann, "Strategies for Sight-Reading and Improvizing Music," 157.

notated music. Sight-reading skills are not intended to do away with rehearsal, but to enable rehearsal to focus not merely on musical mechanics, but to engage musically with musical ideas such that they are able to grow in their power to communicate with an audience. Of necessity, such preparation involves an expansion of both theoretical approaches to music pedagogy, which focus on music as a rational, logical utterance, and performance approaches to music pedagogy, which engage less linear modes of musical thought. Kramer distinguishes the two sides as formalist and humanist.[312]

It is not enough for music curricula to have both sides represented in its offerings. If either side operates strictly within one mode of thought, music students tend to gravitate to the side in which they feel most competent and disregard the concerns of the other side. This results in imbalanced training and even professional antagonism. As long as first-year theory courses represent a fair percentage of musical illiterates, instructors must be cautious about the degree to which verbal summation of musical events substitutes for a concern that students hear the sounds. As Boykan distinguishes, "With a novel we can occasionally interrupt our reading, to reflect on what has happened. But music presses relentlessly forward and every second is filled with new impressions. We cannot stop to reconsider the past, but it remains latent in our minds, and is easy to access."[313] On the other hand, when music theory exhibits little concern for the aural experience of music for illiterate students, singers at least always seem to end up on the humanist side with no kind regard for formal musical thought, and even worse, with a tendency to excuse musical illiteracy in themselves.

---

[312] Kramer, *The Time of Music*, 9, 11.

[313] Boykan, *Silence and Slow Time*, 29.

Interlocking of language systems

Particularly with singers in mind, Callaghan and McDonald propose a reworking of the analogy of linguistic and musical languages to better reflect the reality of the unification of the two languages in the singing art. They recommend an approach to musical language that accommodates some of the possibilities of Saussure's thinking about language, which are not as well supported by the more typical alignments of musical language with Chomskian approaches to generative linguistic theory. Although Chomsky's insights can also be traced to Saussure's influence, Saussure's central insight, as some linguistic theorists understand it, was his insistence that language is not nomenclature. That is, there is no non-linguistic category with which to identify the various aspects of language.[314] Thus as Saussure described it, "in language there are only differences, with no positive terms," which is to say the most basic principle of communicative systems is the ability to distinguish one sound from another.[315] Drawing heavily from theorists such as Jean-Jacques Nattiez, who have developed this aspect of Saussure's thought as Chomsky did not, Callaghan and McDonald observe that both musical and verbal language are mediated through a language system; they are not merely labeled by it. They propose that this semiotic view of linguistic language offers a richer interface with musical language than formalist views. Specifically, one can see the two codes as "interlocking" in vocal music at the phonological level. That is, the specific sound qualities of the verbal language are transformed by the "text" of the musical

---

[314] Ricardo Otheguy, "Saussurean Anti-Nomenclaturism in Grammatical Analysis: A Comparative Theoretical Perspective," in *Signal, Meaning, and Message*, ed. Wallis Reid, *et al*. (Philadelphia: John Benjamins Publishing Company, 2002), 373.

[315] Callaghan and McDonald, "The Singer's Text," 45.

language, producing expressive, emotional, and connotative signification that is substantially different than the same language without its musical setting, and practically inseparable from it.[316] In their estimation, to conceive of musical meaning in vocal music without both general linguistic and musical understandings, as well as understanding the specific music/language relationship generated in a particular composition is to aim too low. "The prosodic features of the verbal text are linked to the musical elements, so the meaning of the song *is more than* either the musical text or the verbal text."[317] (Italics added) This idea of musical meaning is not possible using only structuralist categories.

Callaghan and McDonald take it one step further, showing that the link between these meanings can actually be seen to be the body of the singer: musical and linguistic meanings become embodied in the voice of the singer.[318] This has important implications for voice teachers, who deal most directly with the cultivation of these meanings in singer's bodies. But even music theorists do well to recognize the embodied nature of musical utterance. While music theorists do not need to concern themselves with the physical enabling of embodied musical meaning in the same way that voice teachers do, at the same time if they recognize the importance of embodied musical meaning at the level of musical literacy—that is, the importance for music to leave the pages on which it is printed and become a living part of a musician's being, however that is physically expressed—they will approach the teaching of musical structure differently.

---

[316] Ibid.

[317] Ibid., 46.

[318] Ibid.

The notion of musical language proposed by Callaghan and McDonald has the potential to inspire a rethinking of the categories into which musical representation is divided. For example, John Sloboda, a performing musician turned music psychologist, suggests three levels to musical representation. He describes the lowest or shallowest level as that of nuance. This is the primary level in which performers work, including experiential aspects of pitch and duration, but also perceptive dimensions that are difficult to talk about precisely, such as timbre and loudness. Sloboda's second level is that of the symbolic system of musical notation, which equates to the score. The successful and automatic interpretation of this system is the goal of musical literacy. The third level in Sloboda's view is the musical-grammatical level, a familiarity with the melodic and harmonic "grammatical" structures of music that are the primary purview of music theory classes.[319] The problem with such a formulation is that it does not represent a high enough regard for the embodied meaning of notated music that musical performance can and, according to Callaghan and McDonald, should entail. Sloboda's description seems to allow for literacy to allow progress to the highest level of theoretical analysis, but does not account for its formation and enhancement of music at the "lower" level of nuance. The discipline and practice of music, both performance and theoretical, would be served better by a view that envisions literacy as the foundational level from which musicians may advance to both grammatically informed conceptualizations and the most exquisite nuanced performances of music. Such a view seems better able to translate into curricular and pedagogical concerns of cultivating intrinsic motivation to

[319] Sloboda, *Exploring the Musical Mind,* 154-155.

learn to read music, and to produce intrinsic rewards for voice students who successfully learn to read.[320]

[320] O'Neill and McPherson, "Motivation," 35.

CONCLUSION

This paper began by claiming that competent musical skills represent a particularly poor outcome for singers in higher music education. The main point of the paper, however, was not to prove empirically that singers' musicianship skills are worse than those of all other musicians. Indeed, this would be very difficult to quantify. At the very least, it is evident that poor musical skills among singers seem to be a more overt problem than for other musicians, by virtue of the fact that they have no alternative ways of producing notated music if they are not able to audiate it when they read. The highest form of literacy, whereby musicians can audiate sounds from notation, may in fact be statistically equally poor in other musicians. But the problem can for other instrumentalists remain hidden because they may continue to develop kinesthetic skills and can succeed at that level. Singers have no such option.

Teachers of music, whether theoretical or applied music, must embrace musical literacy as a high and noble goal of their teaching, the very foundation from which both the most creative performances and the most compelling theoretical conceptions will proceed, and without which neither can truly develop in the literate tradition of music that forms the core of study in higher music education. Curriculum developers need never apologize for an emphasis on literacy. Literate musicians are able to incorporate the oral traditions of popular music and many world musics, and more and more attention is being given to this area in higher education. However, the opposite is not true: the most versatile practitioner of an oral musical tradition cannot address himself adequately to a literate tradition without the skill of literacy.

In order for singers to succeed in becoming literate, they must first feel the need to become literate. This will not happen unless literacy becomes a higher priority in their musical education. Audiational literacy, the standard of literacy absolutely necessary for singers, represents the highest standard of literacy, and could well be insisted upon as an appropriately high standard to apply across music departments. Be that as it may, singers' imaginations for the rich nuances of vocal musical meaning need to be activated not only by the modeling of their teachers and the plethora of sound recordings available, but also by singers' own independent acts of perceiving musical scores. Voice teachers, who are also practitioners of an irreplaceable oral tradition of teaching music, potentially occupy a particularly important position in the development of singers' literacy. The ultimate success of a voice teacher's influence is seeing greater and greater musical independence develop in their students, and it is readily acknowledged that they are always indebted to their colleagues in foreign language, musicology, theory, choral music, opera, and theatre for the holistic equipping of the entire singing musician. But voice teachers cannot afford to leave the development of musical literacy entirely up to theory colleagues who may not understand or be sympathetic to the kind of literacy that is essential for singers, and for whom the needs of individual students are not as easily accommodated in the context of larger classes as they are in a private lesson.

For voice teachers, the great challenge is to integrate teaching nuanced sound production on the one hand, with teaching singers how to perceive notated scores on the other. For this to be achieved, notational audiation must ultimately become automatic, so as to free up the majority of students' conscious thought to vocal nuance, sensation, verbal language, and interpretation. This means literacy must receive a great deal of

emphasis early in the singer's development. They must be taught to free themselves from overdependence on keyboards. Even in bodywork and language work, students' initial "performance" preparation strategies must incorporate reading until fluent and imaginative reading becomes a reliable skill. Literacy cannot be reduced to a mechanical skill, but must be infused with all the musical sensibility that great performances entail. And every effort must be made to motivate reading by creating curricular and social situations in which students need to be able to read in order to succeed. If such a standard of musical literacy were to take root and develop in the singing community, singers, rather than being the byword in poor musicianship skills, would become the standard by which literacy for all musicians is measured. That would be a goal worth pursuing.

This process in turn would be greatly aided by a rethinking of the orientation of music theory courses to music literacy pedagogy in such courses as aural and musicianship skills. Using verbal literacy as a model, it seems worth considering that the establishment of musical literacy may prove more effective if it were to precede students' induction into formal music theory courses. Such a shift likely admittedly would involve numerous curricular challenges and adjustments, including both staffing and sequencing, but failure to make some adjustments in this regard may prove to have a detrimental effect on the future of music education. At the very least, the teaching of musical literacy must be recognized as a discipline distinct pedagogically from music theory, and sufficient value must be placed on audiational literacy skills such that experienced and dedicated teachers are enlisted to teach it. At the moment, music literacy as an area of specialty is not common in higher music education.

The proposed construction of intensive literacy courses as gateways into theoretical instruction would necessarily involve three interwoven aspects into a rigorously intensive program, ideally meeting every day as foreign language courses typically do. Such courses would be comprised of an integrated blend of aural skills development apart from notation, the development of skills in decoding staff notation orally/aurally, and improvisation. Classes must be sufficiently small in order for teachers to focus on and attend to individual learning challenges, but sufficiently large to instruct effective ensemble reading. Substantial thought would need to be given to the initial body of repertoire one would use in such a course that would be culturally common to all and familiar enough to enable the internalization of tonal patterns in the way that Kodály described, using what was presumably a more vibrant folksong culture in Hungary at the time than exists currently in America. Many such anthologies have been attempted, with varying degrees of success.

It is the contention of this paper that singers would not be the only beneficiaries of such changes, but that musicians of all instruments, as well as those who go on to develop theoretical/musicological expertise would greatly benefit from a concerted and heightened effort to teach musical literacy. Even more, those training to be music educators in general education would be given an experience and useable pedagogical tools of music literacy development by which not only to improve their own musicianship but also to foster pedagogical motivation to introduce such literacy training at a much earlier stage in students' musical development. In the most optimistic fantasy, in another thirty years college music curricula may need adjustment again to reflect less need for instruction in basic music literac, and such a problem would be most welcome.

In the meantime, the task of solving musical illiteracy, not merely endlessly coping with it, poses very serious challenges for college music educators.

BIBLIOGRAPHY

Abramson, Robert M. *Rhythm Games for Perception and Cognition.* Published by the author, 1973.

Adler, Samuel. *Sight Singing: Pitch, Interval, Rhythm.* New York: W. W. Norton & Co., 1979.

Aiello, Rita and John Sloboda, eds. *Musical Perceptions.* New York: Oxford University Press, 1994.

Albrechtson, Dorte, Kirsten Haastrup, and Birgit Henriksen. *Vocabulary and Writing in a First and Second Language: Processing and Development.* New York: Palgrave, MacMillan, 2008.

Alldahl, Per-Gunnar. "Teaching Music Theory: The European Conservatory." *Journal of Music Theory* 18/1 (1974): 111-122.

Allington, Richard L. "Oral Reading." In *Handbook of Reading Research*, ed. P. David Pearson *et al*., 829-864. New York: Longman, 1984.

Anderson, John R., Jon M. Finchan, and Scott Douglass. "The Role of Examples and Rules in the Acquisition of a Cognitive Skill." *Journal of Experimental Psychology: Learning Memory and Cognition* 23 (1997): 932-945.

Anderson, Neil J. "ACTIVE Reading: The Research Base for a Pedagogical Approach in the Reading Classroom." In *Second Language Reading Research and Instruction: Crossing the Boundaries*, ed. ZhaoHong Han and Neil J. Anderson, 117-143. Ann Arbor, University of Michigan Press, 2009.

Appelman, D. Ralph. *The Science of Vocal Pedagogy: Theory and Application.* Bloomington, IN: Indiana University Press, 1967.

Au, Shun Y. "A Critical Appraisal of Gardner's Social-Psychological Theory of Second Language Learning." *Language Learning* 38/1 (1988): 75-100.

Autry, Mollie R. "A Study of the Effect of Hand Signs in the Development of Sight Singing Skills." D.M.A. Dissertation, University of Texas at Austin, 1975.

Bachman, Lyle F. *Fundamental Considerations in Language Testing.* New York: Oxford University Press, 1990.

Bain, Ken. *What the Best College Teachers Do.* Harvard University Press, 2004.

Banton, Louise J. "The Role of Visual and Auditory Feedback During the Sight-reading of Music," *Psychology of Music* 23/1 (1995), 3-16.

Barefield, Robert. " Self-Analysis Skills for the Developing Singer." *Music Educators Journal* 92/3 (2006): 50-54.

Barry, Barbara R. *Musical Time: The Sense of Order.* Stuyvesant, NY: Pendragon Press, 1990.

Behrman, Alison. *Speech and Voice Science.* San Diego, CA: Plural Publishing, Inc., 2007.

Benati, Alessandro G. and James F. Lee. *Grammar Acquisition and Processing Instruction: Secondary and Cumulative Effects.* Buffalo, NY: Multilingual Matters, 2008.

Benjamin, Thomas. "Theory Pedagogy: An Experimental Approach." *Journal of Music Theory Pedagogy* 8 (1994): 59-74.

_____. "The Learning Process and Teaching." *College Music Symposium* (Fall 1982): 120-132.

Besson, Mireille and Angela D. Friederici. "Language and Music: A Comparative View." *Music Perception* 16/1 (Fall 1998): 1-9.

Besson, Mireille, F. Faïta, I. Peretz, A.-M. Bonnel, and J. Requin. "Singing in the Brain: Independence of Lyrics and Tunes." *Psychological Science* 9/6 (1998): 494-498.

Best, Harold M. "Music Curricula in the Future." *Arts Education Policy Review* 94/2 (1992): 2-7.

Blades-Zeller, Elizabeth. *A Spectrum of Voices: Prominent American Voice Teachers Discuss the Teaching of Singing.* Lanham, MD: Scarecrow Press, Inc., 2002.

Booth Wayne C. *The Vocation of a Teacher: Rhetorical Occasions 1967-1988.* University of Chicago Press, 1988.

Boykan, Martin. *Silence and Slow Time: Studies in Musical Narrative*. Lanham, MD: The Scarecrow Press, Inc., 2004.

Bradshaw, Merrill. "Improvisation and Comprehensive Musicianship." *Music Educators Journal* 66/5 (1980): 113-115.

Bribitzer-Stull, Matthew. "Contention in the Classroom: Encouraging Debate and Alternate Readings in the Undergraduate Theory Class." *Journal of Music Theory Pedagogy,* 17 (2003)

Brink, Emily R. "A Cognitive Approach to the Teaching of Aural Skills Viewed as Applied Music Theory." Ph.D. dissertation, Northwestern University, 1979.

Broadbent, Donald E. *Perception and Communication.* New York: Pergamon Press, 1958.

_____. "Attention and the Perception of Speech." *Scientific American* 206/4 (1962): 143-151.

Brodsky, Warren, Avishai Henik, Bat-Sheva Rubenstein, and Moshe Zorman. "Auditory Imagery from Musical Notation in Expert Musicians." *Perception and Psychophysics* 65/4 (2003): 602-612.

Brown, Steven. "The 'Musilanguage' Model of Music Evolution." In *The Origins of Music*, ed. Nils L. Wallin. 271-300. Cambridge, MA: MIT Press, 2000.

Brown, Steven, Björn Merker and Nils L. Wallin. "An Introduction to Evolutionary Musicology." In *The Origins of Music*, ed. Nils L. Wallin, 3-24. Cambridge, MA: MIT Press, 2000.

Browne, Richmond. "If We Are All Theorists, Why Aren't We All Theorists?" *College Music Society* 17/1 (Spring 1977): 135-137.

Bruner, Jerome. "Another Look at New Look 1" *American Psychologist* 47 (1992): 780-783.

Bruser, Madeline. *The Art of Practicing: A Guide to Making Music from the Heart.* New York: Bell Tower, 1997.

Bunch, Meribeth. *Dynamics of the Singing Voice.* New York: Springer-Verlag, 1982.

Bunch-Dayme, Meribeth. *The Performer's Voice: Realizing Your Vocal Potential.* New York: W.W. Norton & Co., 2005.

Butler, David. "Why the Gulf between Music Perception Research and Aural Training?" *Bulletin of the Council for Research in Music Education* 132 (1997): 38-48.

Caldwell, Robert. *The Performer Prepares.* Dallas TX: Pst…Inc., 1990.

Callaghan, Jean. *Singing and Voice Science.* San Diego, CA: Singular Publishing Group, 2000.

Callaghan, Jean and Edward McDonald. "The Singer's Text: Music, Language, and the Expression of Meaning." *Australian Voice* 9 (2003): 42-48.

Carrell, Patricia L. "Awareness of Text Structure: Effects on Recall," *Language Learning* 42/1 (1992): 1-20.

Carroli, Piera. *Literature in Second Language Education: Enhancing the Role of Texts in Learning.* New York: Continuum International Publishing Group, 2008.

Casarow, Pattye Johnson. "Sight-singing Pedagogy: Analysis of Practice and Comparison of Systems as Described in Related Literature." DMA Dissertation, Arizona State, University, 2002.

Chapman, Janice L. *Singing and Teaching Singing: A Holistic Approach to Classical Voice.* San Diego, CA: Plural Publishing Inc., 2006

Childs, Barney. "Teaching Music Theory: The Experimental College." *Journal of Music Theory* 18/1 (1974): 101-110.

Choksy, Lois and David Brummitt. *120 Singing Games and Dances for Elementary Schools.* Englewood Cliffs, NJ: Prentice-Hall, Inc., 1987.

Christensen, Thomas, "Introduction," *The Cambridge History of Western Music Theory*, ed. Thomas Christensen. New York: Cambridge University Press, 2002.

Christy, Van A. *Foundations in Singing: A Basic Textbook in the Fundamentals of Technic and Song Interpretation.* Dubuque, IA: Wm. C. Brown Co. Publishers, 1965.

_____, *Expressive Singing: Pedagogy, Production Theory and Technic, Style and Interpretation, Song Repertoire, Principles of Piano Accompaniment, Solo Voice and Piano Accompaniment, Recordings.* Dubuque, IA: Wm. C. Brown Co. Publishers, 1975.

Claxton, Charles S. and Patricia Murrell. *Learning Styles: Implications for Improving Educational Practices.* ASHE-ERIC Higher Education Report No. 4. Washington D.C.: Association for the Study of Higher Education, 1987.

Cohn, Richard. "Music Theory's New Pedagogability." *Music Theory Online* 4/2 (March 1998).

Cook, Vivian. *Second Language Learning and Language Teaching.* London: Hodder Education, 2008.

Covington, Kate. "An Alternate Approach to Aural Training," *Journal of Music Theory Pedagogy* 6 (1992): 5-18.

Cross, Ian, Peter Howell, and Robert West. "Structural Relationships in the Perception of Musical Pitch." In *Musical Structure and Cognition*, ed. Peter Howell, Ian Cross, and Robert West, 121-142. London: Academic Press, 1985.

Crowder, Robert G. "Auditory Memory." In *Thinking in Sound: The Cognitive Psychology of Human Audition*, ed. Stephen McAdams and Emmanuel Bigand, 113-145. Oxford: Clarendon Press, 1993.

Damschroder, David A. "Flexibility in the Theory Classroom: Strategies for the Management of Diversity," *Journal of Music Theory Pedagogy* 3/2 (1989): 177-187.

Dannhäuser, Adolphe. *Solfège des Solfèges.* Translated by J. H. Cornell. New York: G. Schirmer Inc., 1891.

Darling, David. *Return to Child: Music for People's Guide to Improvising Music and Authentic Group Leadership.* Goshen, CT: Music for People, 2008.

David, Marilee. *The New Voice Pedagogy*. Lanham, MD: Scarecrow Press, Inc., 1995.

Davidson, Lyle and Larry Scripp. "A Developmental View of Sight Singing," *Journal of Music Theory Pedagogy* 2/1 (1988): 10-23.

DeKeyser, Robert. "Implicit and Explicit Learning." In *Handbook of Second Language Acquisition,* ed. Catherine J. Doughty and Michael H. Long, 313-348. Malden, MA: Blackwell Publishing, 2003.

_____. "Automaticity and Automatization." In *Cognition and Second Language Instruction*, ed. Peter Robinson, 125-151. New York: Cambridge University Press, 2001.

Deutsch, Diana. "The Processing of Pitch Combinations." In *Psychology of Music,* 2nd ed., ed. Diana Deutsch, 349-411. New York: Academic Press, 1999.

_____. "Memory and Attention in Music." In *Music and the Brain: Studies in the Neurology of Music*, 2d ed., ed. MacDonald Critchley and R.A. Henson, 95-130. London: William Heinemann Medical Books, 1977.

Deutsch, Diana and John Faroe. "The Internal Representation of Pitch Sequences in Tonal Music." *Psychological Review* 88 (1981): 503-522.

Domek, Richard C. "Teaching Aural Skills to High School Students." *Music Educators Journal* (January 1979): 54-57.

Dörnyei, Zoltán. "The L2 Motivational System." In *Motivation, Language Identity, and the L2 Self*, ed. Zoltán Dörnyei and Ema Ushioda, 9-42. Buffalo, NY: Multilingual Matters, 2009.

_____. *Motivational Strategies in the Language Classroom.* New York: Cambridge University Press, 2001.

Dowling, W. Jay. "Procedural and Declarative Knowledge in Music Cognition and Education." In *Psychology and Music: the Understanding of Melody and Rhythm*, ed. Thomas J. Tighe and W. Jay Dowling, 5-18. Hillsdale, NJ: Lawrence Earlbaum Associates, 1993.

_____. "Expectancy and Attention in Melody Perception." *Psychomusicology* 9 (1990): 148-160.

Edlund, Lars. *Modus Novus: Studies in Reading Atonal Melodies.* Broude, 1963.

_____. *Modus Vetus: Sight Singing and Ear Training in Major/Minor Tonality.* Broude, 1974.

Elliott, Charles A. "The Relationships among Instrumental Sight-reading Ability and Seven Selected Predictor Variables." *Journal of Research in Music Education* 30 (1982): 5-14.

Ellis, Nick C. "Memory for Language." In *Cognition and Second Language Instruction*, ed. Peter Robinson, 33-68. New York: Cambridge University Press, 2001.

Ellis, Rod. *The Study of Second Language Acquisition.* 2d ed. New York: Oxford University Press, 2008.

Ester, Don P, John W. Scheib, and Kimberly J. Inks. "Takadimi: A Rhythm System for All Ages," *Music Educators Journal* (November 2006): 60-65.

Eysenck, Michael W. and Mark T. Keane. *Cognitive Psychology: A Student's Handbook.* 5th ed. New York: Psychology Press, 2005.

Farkas, A. "Coach's notebook …Exploring the Alexander Technique and Opera." *Opera Journal* 28/3 (1995): 16-32.

Farrell, Gerry. "Thinking, Saying, Playing: Children Learning the Tabla." *Bulletin of the Council for Research in Music Education* 133 (Summer 1997): 14-19.

Fink, L. Dee. *Creating Significant Learning Experiences: An Integrated Approach to Designing College Courses.* Jossey-Bass, 2003.

Fink, Robert. *The Origin of Music.* Saskatoon, SK: Greenwich-Meridian Co., 1981.

Fletcher, Stanley. "Music-reading Reconsidered as a Code-Learning Problem." *Journal of Music Theory* 1 (1957) 76-96.

Foltz, Roger E. "Sight Singing in Relation to the Total Theory Program." *Indiana Theory Review* (Winter 1981): 3-10.

Foreman, Edward. *Authentic Singing.* 2 vol. Minneapolis: Pro-Musica Press, 2001.

_____. *The Porpora Tradition.* Champagne, IL: Pro-Musica Press, 1969.

Forte, Allen. "Music Theory in Re-Transition: Centripetal Signs," *College Music Society* 17/1 (Spring 1977): 156-162.

Fries, Charles C. *Linguistics and Reading.* Chicago: Holt, Rinehart, and Winston, Inc., 1962.

Gallwey, W. Timothy. *The Inner Game of Tennis*. Rev. ed. New York: Random House, 1997. (1st ed. 1974)

Gardner, Robert C. "Integrative Motivation and Second Language Acquisition." In *Motivation and Second Language Acquisition*, ed. Zoltán Dörnyei and Richard Schmidt, 1-19. Honolulu, HI: Second Language Teaching and Curriculum Center, 2001.

_____. "The Socio-educational Model of Second Language Learning: Assumptions, Findings and Issues." *Language Learning* 38/1 (1988): 101-126.

_____. *Social Psychology and Second Language Learning: The Role of Attitudes and Motivation.* London: Arnold, 1985.

Gardner, Robert C. and Peter D. MacIntyre. "A Student's Contributions to Second Language Learning. Part I: Cognitive Variables." *Language Teaching* 25 (1992): 211-220.

_____. "A Student's Contributions to Second Language Learning. Part II: Affective Variables." *Language Teaching* 26 (1993): 1-11.

Gass, Susan M. "Input and Interaction." In *Handbook of Second Language Acquisition,* ed. Catherine J. Doughty and Michael H. Long, 224-255. Malden, MA: Blackwell Publishing, 2003.

Gauldin, Robert. "Teaching Music Theory: The Conservatory." *Journal of Music Theory* 18/1 (1974): 75-90

Gillespie, Jeffrey L. "Difficulty Factors in Melodic Perception." *Journal of Music Theory Pedagogy* 7 (1993): 41-53.

Ginsborg, Jane. "Strategies for Memorizing Music." In *Musical Excellence,* ed. Aaron Williamon. New York: Oxford University Press, 2004.

Gombert, Jean Émile. *Metalinguistic Development*. Chicago, IL: University of Chicago Press, 1992.

Gordon, Edwin E. *Learning Sequences in Music: Skills, Content, and Patterns.* Chicago: GIA Publications, 1997.

Gough, Philip B. "Word Recognition." In *Handbook of Reading Research*, ed. P. David Pearson et al, 225-253. New York: Longman, 1984.

Grabe, William. *Reading in a Second Language: Moving from Theory to Practice.* New York: Cambridge University Press, 2009.

Gullette, Margaret Morganroth, ed. *The Art and Craft of Teaching.* Harvard-Danforth Center for Teaching and Learning, 1982.

Hahn, Lois. "Music Reading and Language Reading: Correlations in Processes and Instruction. *Bulletin of the Council for Research in Music Education.* 93 (late summer 1987): 41-48.

Hall, Anne Carothers. *Studying Rhythm.* 3rd edition. Upper Saddle River, NJ: Prentice-Hall, Inc., 2003. (1st edition 1989)

Hammer, H. "An Experimental Study of the CASE of the Teaching of Melodic Sight Singing." *Journal of Research in Music Education* 11 (1963): 44-54.

Hammerley, Hector. *An Intergrated Theory of Language Learning and its Practical Consequences.* Blaine, WA: Second Language Publications, 1985.

Han, ZhaoHong. *Fossilization in Adult Second Language Acquisition.* Celvedon: Multilingual Matters Ltd., 2004.

Hansen, Dee, and Elaine Bernstorf. "Linking Music Learning to Reading Instruction," *Music Educators Journal* (March 2002): 17-21, 52.

Harrison, Peter T. *The Human Nature of the Singing Voice: Exploring a Holistic Basis for Sound Teaching and Learning.* Edinburgh: Dunedin Academic Press, 2006.

Hegyi, Erzsebet. *Solfege According to the Kodaly Concept.* 2 vols. Budapest: Editio Musica, 1975, 1979.

Hemsley, Thomas. *Singing and Imagination: A Human Approach to a Great Musical Tradition.* New York: Oxford University Press, 1998.

Henke, Herbert H. "The Application of Émile Jacques-Dalcroze's Solfége-Rhythmique to the Choral Rehearsal." *Choral Journal* 25/4 (1984): 11-14.

Henry, Earl. *Sightsinging*. Upper Saddle River, NJ: Prentice-Hall, Inc., 1997.

Henry, Michele L. "The Use of Targeted Pitch Skills for Sight-Singing Instruction in the Choral Rehearsal," *Journal of Research in Music Education* 52/3 (2004): 206-217.

Hillbrand, E. K. *Hillbrand Sight-singing Test.* Yonkers, NY: World Book, 1923.

Hoffman, Richard, William Pelto and John W. White. "Takadimi: A Beat-Oriented System of Rhythm Pedagogy." *Journal of Music Theory Pedagogy* 10 (1996): 7-30.

Hoover, W. A. "The Importance of Phonemic Awareness in Learning to Read." SEDL Newsletter 2002. Accessed at http://www.sedl.org/pubs/sedl-letter/v14n03/3.html

Houlahan, Micheál and Philip Tacka. "Continuing the Dialogue: the Potential of Relative Solmization for the Music Theory Curriculum at the College Level." *Journal of Music Theory Pedagogy* 8 (1994): 221-225.

_____. "The Americanization of Solmization: A Response to Timothy A. Smith," *Journal of Music Theory Pedagogy* 6 (1992): 137-152.

_____. "Sound Thinking: A Suggested Sequence for Teaching Musical Elements Based on a Philosophy of Zoltan Kodály for a College Music Course." *Journal of Music Theory Pedagogy* 4/1 (1990): 85-109.

_____. "Sequential Order for the Preparation, Presentation, Practice and Evaluation of Rhythmic and Melodic Concepts." *Journal of Music Theory Pedagogy* 4/2 (1990): 243-267.

Hudson, B. "Effects of the Alexander Technique on the Respiratory System of the Singer/Actor." *Journal of Singing* 59 (2002): 9-17.

Hulstijn, Jan H. "Incidental and Intentional Learning," In *Handbook of Second Language Acquisition,* ed. Catherine J. Doughty and Michael H. Long, 349-381. Malden, MA: Blackwell Publishing, 2003.

_____. "Intentional and Incidental Second Language Vocabulary Learning: A Reappraisal of Elaboration, Rehearsal, and Automaticity," In *Cognition and Second Language Instruction*, ed. Peter Robinson, 256-286. New York: Cambridge University Press, 2001.

Humboldt, Wilhelm von. *On Language: The Diversity of Human Language-Structure and its Influence on the Mental Development of Mankind.* Translated by Peter Heath. New York: Cambridge University Press, 1988.

Jackendoff, Ray and Fred Lerdahl. *A Deep Parallel Between Music and Language.* Bloomington, IN: Indiana University Linguistics Club, 1980.

Jørgensen, Harald. "Strategies for Individual Practice." In *Musical Excellence*, ed. Aaron Williamon. New York: Oxford University Press, 2004.

Kagen, Sergius. *On Studying Singing.* New York: Dover Publications, Inc. 1960. (first published by the author in 1950)

Karpinski, Gary S. *Aural Skills Acquisition: The Development of Listening, Reading, and Performing Skills in College-Level Musicians.* New York: Oxford University Press, 2000.

_____. "Lessons from the Past: Music Theory Pedagogy and the Future." *Music Theory Online* 6/3 (August 2000).

_____. "Reviews of Recent Textbooks in Theory and Musicianship: 3. Aural Skills." *Music Theory Spectrum* 15 (1993): 241-256.

_____. "A Model for Music Perception and Its Implications in Melodic Dictation." *Journal of Music Theory Pedagogy* 4 (1990): 191-229.

Kazez, Daniel. "Solfege Drills," *Journal of Music Theory Pedagogy* 6 (1992): 19-34.

Killian, Janice N., and Michele L. Henry. "A Comparison of Successful and Unsuccessful Strategies in Individual Sight-Singing Preparation and Performance." *Journal of Research in Music Education* 53/1 (2005): 51-65.

Klonoski, Edward. "A Perceptual Learning Hierarchy: An Imperative for Aural Skills Pedagogy." *College Music Symposium* 40 (2000): 168-169.

_____. "Teaching Pitch Internalization Processes." *Journal of Music Theory Pedagogy* 12 (1998): 91-96.

Knox, Marjorie. "Reading Music and Written Text: The Process of Sight-Singing." PhD Dissertation, University of Arizona, 2003.

Kodály, Zoltan. *The Selected Writings of Zoltán Kodály*. Translated by Lili Halápy and Fred Macnicol, ed Ferenc Bónis. London: Boosey and Hawkes, 1964.

_____. *Let Us Sing Correctly*. London: Boosey and Hawkes, 1963.

Kramer, Jonathan. "*The Time of Music: New Meanings, New Temporalities, New Listening Strategies.* New York: Schirmer Books, 1988.

Krashen, Stephen. "Theory Versus Practice in Language Training." In *Innovative Approaches to Language Teaching*, ed. Robert W. Blair, 15-30. Rowley MA: Newbury House Publishers, Inc., 1982.

Krumhansl, Carol L. *Cognitive Foundations of Musical Pitch.* New York: Oxford University Press, 1990.

Larson, Steve. "Integrated Music Learning and Improvisation: Teaching Musicianship and Theory through Menus, Maps, and Models." *College Music Symposium* 35 (1995): 76-90.

_____. "Scale-degree Function: A Theory of Expressive Meaning and its Application to Aural Skills Pedagogy." *Journal of Music Theory Pedagogy* 7 (1993): 69-84.

_____. "The Value of Cognitive Models in Evaluating Solfége Systems." *Indiana Theory Review* 14 (1993): 73-116.

Lehmann, Andreas C. and Anders Ericsson. "Performance without Preparation: Structure and Acquisition of Expert Sight-Reading and Accompanying Performance." *Psychomusicology* 15 (1996): 1-29.

Lehmann, Andreas C. and Victoria McArthur. "Sight-Reading," In *The Science and Psychology of Music Performance*, ed. Richard Parncutt and Gary E. McPherson, 135-150. New York: Oxford University Press, 2002.

Leonard, Kendra Preston. *The Conservatoire Américain: A History.* Lanham, MD: The Scarecrow Press, Inc., 2007.

Lerdahl, Fred and Ray Jackendoff. *A Generative Theory of Tonal Music*. Cambridge, MA: MIT Press, 1983.

Levy, Edward. "Analysis Applied to Performance." *College Music Symposium* (Spring 1979): 128-138.

Logan, Gordon D. "Automaticity, Resources, and Memory: Theoretical Controversies and Practical Implications." *Human Factors* 30/5 (1988): 583-598.

London, Justin. *Hearing in Time.* New York: Oxford University Press, 2004.

Lucas, Keitha V. "Contextual Condition and Sightsinging Achievement of Middle School Choral Students," *Journal of Research in Music Education* 42/3 (1994): 203-216.

MacIntyre, Peter D., Sean P. MacKinnon, and Richard Clément. "The Baby, the Bathwater, and the Future of Language Learning Motivation Research." In *Motivation, Language Identity, and the L2 Self*, ed. Zoltán Dörnyei and Ema Ushioda, 43-65. Buffalo, NY: Multilingual Matters, 2009.

_____. "Toward the Development of a Scale to Assess Possible Selves as a Source of Language Learning Motivation." In *Motivation, Language Identity, and the L2 Self*, ed. Zoltán Dörnyei and Ema Ushioda, 193-214. Buffalo, NY: Multilingual Matters, 2009.

MacWhinney, Brian. "The Competition Model: The Input, the Context, and the Brain." In *Cognition and Second Language Instruction*, ed. Peter Robinson, 69-90. New York: Cambridge University Press, 2001.

Manén, Lucie. *Bel Canto: The Teaching of Classical Italian Song-Schools, Its Decline and Restoration.* New York: Oxford University Press, 1987.

Marple, Hugo D. "Short Term Memory and Musical Stimuli." In *Psychology and Acoustics of Music: A Collection of Papers,* ed. Edward P Asmus Jr., 74-93 Lawrence: Division of Continuing Education, University of Kansas, n.d.

Marvin, Elizabeth West. "Research on Tonal Perception and Memory: What Implications for Music Theory?" *Journal of Music Theory Pedagogy* 9 (1995): 31-70.

Matthews, Peter. *A Short History of Structural Linguistics.* Cambridge: Cambridge University Press, 2001.

McGaughey, Janet. "Teaching Music Theory: The University." *Journal of Music Theory* 18/1 (1974): 46-50.

McGroarty, Mary. "Situating Second Language Motivation." In *Motivation and Second Language Acquisition*, ed. Zoltán Dörnyei and Richard Schmidt, 69-91. Honolulu, HI: Second Language Teaching and Curriculum Center, 2001.

McMullen, Erin and Jenny R. Saffran. "Music and Language: A Developmental Comparison." *Music Perception* 21/3 (2004): 289-311.

McPherson, Gary E. and Alf Gabrielsson, "From Sound to Sign." In *The Science and Psychology of Music Performance*, ed. Richard Parncutt and Gary E. McPherson, 99-115. (New York: Oxford University Press, 2002).

Middleton, James A. "Develop Choral Reading Skills." *Music Educators Journal* (March 1984): 29-32.

Miller, Richard. *The Structure of Singing: System and Art in Vocal Technique.* New York: Schirmer Books, 1996.

Modern Language Association Ad Hoc Committee on Foreign Languages. "Foreign Languages and Higher Education: New Structures for a Changed World." New York: Modern Language Association of America, 2007.

More, Bruce E. "Sight Singing and Ear Training at the University Level." *The Choral Journal* 25/7 (1985): 9-11.

Multer, Walt. "Solmization and Musical Perception." *Theory and Practice* (February 1978): 29-51.

Murphy, Howard A. *Teaching Musicianship.* Coleman-Ross, 1950.

Music Educators National Conference (U.S.) Committee on Music in General Education, *Music in General Education*, Washington D.C.: MENC, 1965.

Nachmanovitch, Stephen. *Free Play: The Power of Improvisation in Life and the Arts.* Los Angeles: Jeremy P. Tarcher, Inc., 1990.

Nattiez, Jean-Jacques. *Music and Discourse: Toward a Semiology of Music*. Translated by Carolyn Abbate. Princeton, NJ: Princeton University Press, 1990.

Nation, I.S.P. *Learning Vocabulary in Another Language.* New York: Cambridge University Press, 2001.

Nelson, John C. "A Comparison of Two Methods of Achievement in Sight Singing." Ph.D. diss., University of Iowa, 1970.

Nelson, Samuel and Elizabeth Blades-Zeller. *Singing with your Whole Self: The Feldenkrais Method and Voice.* Lanham, MD: Scarecrow Press, Inc., 2002.

Noels, Kimberly. "New Orientations in Language Learning Motivation: Towards a Model of Intrinsic, Extrinsic, and Integrative Orientation and Motivation." In *Motivation and Second Language Acquisition*, ed. by Zoltán Dörnyei and Richard Schmidt, 43-68. Honolulu, HI: Second Language Teaching and Curriculum Center, 2001.

Nordgren, Quentin. "Traditional and Comprehensive Musicianship: A Survey." *American Music Teacher* (January 1980): 34-36.

Olmstead, Andrea. *Julliard: A History.* Chicago, IL: University of Illinois Press, 1999.

O'Neill, Susan A. and Gary E. McPherson, "Motivation." In *The Science and Psychology of Music Performance*, ed. Richard Parncutt and Gary E. McPherson, 31-46. New York: Oxford University Press, 2002

Ostwald, David F. *Acting for Singers: Creating Believable Singing Characters.* New York: Oxford University Press, 2005.

Otheguy, Ricardo. "Saussurean Anti-Nomenclaturism in Grammatical Analysis: A Comparative Theoretical Perspective." In *Signal, Meaning, and Message*, ed. by Wallis Reid, Ricardo Otheguy, and Nancy Stern, 373-403. Philadelphia: John Benjamins Publishing Company, 2002.

Ottman, Robert W. and Nancy Rogers. *Music for Sightsinging.* 7th edition. Upper Saddle River, NJ: Prentice-Hall, Inc., 2007. (1st edition 1956)

Oxford, Rebecca. *Language Learning Motivation: Pathways to the New Century.* Manoa, HI: University of Hawaii, 1996.

_____. *Language Learning Strategies: What Every Teacher Should Know.* Rowley, MA: Newbury House, 1989.

Paradis, M. "Neurolinguistic Aspects of Implicit and Explicit Memory: Implications for Bilingualism and SLA." In *Implicit and Explicit Learning of Languages*, ed. Nick Ellis, 393-419. London: Academic Press, 1994.

Patel, Aniruddh D. "Language, Music, Syntax, and the Brain." *Nature Neuroscience* 6/7 (2003): 674-681.

_____. "Syntactic Processing in Language and Music: Different Cognitive Operations, Similar Neural Resources?" *Music Perception* 16/1 (Fall 1998): 27-42.

"Pedagogy in Perspective: Music Theory in Higher Education." *Journal of Music Theory* 18/1 (1974): 44-122.

Pembrook, Randall G. and H. Lee Riggins. "'Send help!' Aural Skills Instruction in U.S. Colleges and Universities." *Journal of Music Theory Pedagogy* 4 (1990): 231-241.

Persson, Roland S. and Colin Robson. "The Limits of Experimentation: On Researching Music and Musical Settings." *Psychology of Music* 23 (1995): 39-47.

Phillips, Kenneth H. "Teaching Singers to Sight Read." *Teaching Music* 3/6 (1996): 32-33.

_____. "Sight Singing: Where Have We Been? Where Are We Going?" *Choral Journal* 24/6 (1984): 11-17.

Pizzolato, Jane Elizabeth. "Achieving College Student Possible Selves: Navigating the Space between Commitment and the Achievement of Long-term Identity Goals." *Cultural Diversity and Ethnic Minority Psychology* 12/1 (2006): 57-69.

Powers, Harold. "Language Models and Musical Analysis." *Ethnomusicology* 24/1 (January 1980): 1-60.

Pratt, George, with Michael Henson and Simon Cargill. *Aural Awareness: Principles and Practice,* rev. ed. New York: Oxford University Press, 1998.

Pressley, Michael. "The Cognitive Science of Reading." *Contemporary Educational Psychology* 22/2 (1997): 247-259.

Rayner, Keith, Barbara R. Foorman, Charles A. Perfetti, David Pesetsky, and Mark S. Seidenberg. "How Should Reading Be Taught?" *Scientific American* (March 2002): 84-91.

Reineke, Toni. "Simultaneous Processing of Music and Speech," *Psychomusicology* 1 (Spring 1981): 58-77.

Ribeiro-Pereira, José Miguel, "A Theory of Harmonic Modulation: The Plastic Model of Tonal Syntax and the Major-Minor Key System." Ph. D. diss., Columbia University, 2004.

Riggins, H. Lee. "Scale-degree vs. Intervallic Hearing: Toward a Synthesis." Paper presented to the joint meeting of the Central Midwest Theory Society and the Great Plains Chapter of the College Music Society, Iowa City, 1988.

Robinson, Peter. "Attention and Memory during Second Language Acquisition." In *Handbook of Second Language Acquisition*, ed. Catherine J. Doughty and Michael H. Long, 631-678. Malden, MA: Blackwell Publishing, 2003.

Robinson, Peter, ed. *Cognition and Second Language Instruction*. New York: Cambridge University Press, 2001.

_____. "Attention, Memory, and the 'Noticing' Hypothesis" in *Language Learning* 45/2 (1995): 283-331.

Roederer, Juan G. *The Physics and Psychophysics of Music: An Introduction,* 3d ed. New York: Springer-Verlag, 1995.

Rogers, George and Rosemary C. Watkins. "The Relationship between Prior Musical Training and Aural Discrimination Skills of Elementary Education Majors." *Contributions to Music Education* 13 (1986): 48-55.

Rogers, Michael R. *Teaching Approaches in Music Theory: An Overview of Pedagogical Philosophies,* 2nd edition. Carbondale, IL: Southern Illinois University Press, 2004. (1st edition, 1984)

_____. "How Much and How Little Has Changed? Evolution in Theory Teaching." *College Music Society* 40 (2000): 110-116.

_____. "The Jersild Approach: A Sight-Singing Method from Denmark." *College Music Symposium* 36 (1996): 149-161.

_____. "A Report on the 1992 CMS Theory Pedagogy Institute," *Journal of Music Theory Pedagogy* 6 (1992): 35-41.

_____. "The Rich Messiness of Music: Teaching Theory in Music with Contradictions and Paradox." *College Music Symposium* 30/1 (1990): 131-141.

_____. "Beyond Intervals: The Teaching of Tonal Hearing." *Indiana Theory Review* 6/3 (1983): 18-34.

_____. "Preventative Medicine in Theory Teaching." *American Music Teacher* (April/May 1983): 12-16.

_____. "On the Teaching of Theory Teaching: a Selected Bibliography of Music Theory Pedagogy." *Indiana Theory Review* (Fall 1981): 61-82.

Rostron, Andrew and Suzanne Bottrill. "Are Pianists Different? Some Evidence from Performers and Non-Performers." *Psychology of Music* 28 (2000): 48-61.

Royal, Matthew S. "Music Cognition and Aural Skills: A Review Essay on George Pratt's *Aural Awareness*." *Music Perception* 17/1 (Fall 1999): 127-144.

Sachs, J. D. S. "Memory in Reading and Listening to Discourse." In *Memory and Cognition* 2 (1974): 95-100.

Schachter, Carl. "Diversity and the Decline of Literacy in Music Theory," *College Music Society* 17/1 (Spring 1977): 150-153.

Schmidt, Charles P. and Moya L. Andrews. "Case Study of a First-Year University Voice Major: A Multi-Disciplinary Study." *Psychology of Music* 24 (1996): 237-243.

Schmidt, Richard. "Attention." In *Cognition and Second Language Instruction*, ed. Peter Robinson, 3-32. New York: Cambridge University Press, 2001.

Schneider, Walter and Mark Detweiler. "The Role of Practice in Dual-Task Performance: Toward Workload Modeling in a Connectionist Control Architecture." *Human Factors* 30/5 (1988): 539-566.

Schön, Donald A. *Educating the Reflective Practitioner*. San Franscisco, Jossey-Bass, 1987.

Scott, Thomas M. "Sight-Singing in the College-Level Choral Program." *The American Organist* 29 (1995): 68-71.

Scripp, Lyle. "The Development of Skill in Reading Music." Doctoral dissertation, Harvard University, 1995.

Serafine, Mary Louise. *Music as Cognition: the Development of Thought in Sound.* New York: Columbia University Press, 1988.

Shapiro, K.L., K.M Arnell, and J.C. Raymond. "The Attentional Blink." *Trends in Cognitive Sciences* 1 (1997): 291-296.

Sheldon, Deborah A. "Effects of Contextual Sight-Singing and Aural Skills Training on Error-Detection Abilities." *Journal of Research in Music Education* 46 (1998): 384-395.

Silliman, A. Cutler. "Comprehensive Musicianship: Some Cautionary Words." *College Music Symposium* (Fall 1980) 125-129.

Skehan, Peter. "Individual Differences in Second Language Learning." *Studies in Second Language Acquisition* 13/2 (1991): 275-298.

Skehan, Peter and Pauline Foster. "Cognition and Tasks." In *Cognition and Second Language Instruction*, ed. Peter Robinson, 183-205. Cambridge: Cambridge University Press, 2001.

Sloboda, John. *Exploring the Musical Mind: Cognition, Emotion, Ability and Function.* New York: Oxford University Press, 2005.

_____. *The Musical Mind: The Cognitive Psychology of Music.* Oxford: Claredon Press, 1985.

_____. "The Psychology of Music Reading." *Psychology of Music* 6/2 (1978): 3-20.

Smith, Brenda and Robert Thayer Sataloff. *Choral Pedagogy.* San Diego, CA: Singular Publishing Group, 2000.

Smith, Charles. "Duplets, Triplets, Quadruplets." *Instrumentalist* (April 1981): 11-13.

Smith, Timothy A. "Ending the Dialogue: Imaginary Solutions Are No Solution." *Journal of Music Theory Pedagogy* 8 (1994): 227-230.

_____. "Liberation of Solmization: Searching for Common Ground." *Journal of Music Theory Pedagogy* 6 (1992): 153-168.

_____. "A Comparison of Pedagogical Resources in Solmization Systems." *Journal of Music Theory Pedagogy* 5 (1991): 1-23.

Smith, W. Stephen. *The Naked Voice: A Wholistic Approach to Singing.* New York: Oxford University Press, 2007.

Spiro, Rand J. and Ann Myers. "Individual Differences and Underlying Cognitive Processes in Reading." In *Handbook of Reading Research*, ed. P. David Pearson et al., 471-501. New York: Longman, 1984.

Sticht, Thomas G. and James H. James. "Listening and Reading." In *Handbook of Reading Research*, ed. P. David Pearson et al., 293-317. New York: Longman, 1984.

Sundberg, Johan. *The Science of the Singing Voice*. Dekalb, IL: Northern Illinois University Press, 1987.

Swain, Merrill, Lindsay Brooks, and Agustina Tocalli-Beller. "Peer-Peer Dialogue as a Means of Second Language Learning." *Annual Review of Applied Linguistics* 22 (2002): 171-185.

Sweetnam, Paul. "Effects of Applying an Aural Participation Procedure while Note Reading and Learning Unfamiliar Music Excerpts." DMA diss., University of Southern California, 2007.

Swinney, David and Tracy Love. "The Processing of Discontinuous Dependencies in Language and Music." *Music Perception* 16/1 (Fall 1998): 63-78.

Szönyi, Erzsébet. *Musical Reading and Writing.* Vol. 1. New York: Boosey & Hawkes, 1974. (First published in Hungary in 1954)

Tan, Siu-Lan. "Beginner's Intuitions about Musical Notation." *College Music Symposium* 42 (2002): 131-141.

Taylor, Charles. *Human Agency and Language: Philosophical Papers 1.* New York: Cambridge University Press, 1985.

Thackray, Rupert. *Aural Awakening.* CIRCME, School of Music, University of Western Australia, 1978.

_____. "Some Thoughts on Aural Training." *Australian Journal of Music Education* (October 1975): 25-30.

Thompson, Kathy. "A Qualitative Study of Metaphors for Pitch Perfection." *Journal of Music Theory Pedagogy* 18 (2004): 81-107.

Thompson, Sam and Andreas C. Lehmann. "Strategies for Sight Reading and Improvising Music." In *Musical Excellence,* ed. Aaron Williamon, 143-161. New York: Oxford University Press, 2004.

Thomson, William. *Advanced Music Reading.* Tucson: Sonora Music, 1975. (First published, 1969)

Tighe, Thomas J., and W. Jay Dowling. *Psychology and Music: The Understanding of Melody and Rhythm.* Lawrence Erlbaum Associates, 1993.

Titze, Ingo R. *Principles of Voice Production.* Second Printing. Iowa City, IA: National Center for Voice and Speech, 2000.

Tomlin, Russell S. and Victor Villa. "Attention in Cognitive Science and Second Language Acquisition." *Studies in Second Language Acquisition* 16/2 (1994): 183-203.

Treitler, Leo. "Being at a Loss for Words." *Archiv für Musikwissenschaft*, 64/4 (2007): 265-284.

Trubitt, Allen R. and Robert S. Hines. *Ear Training and Sight-singing: An Integrated Approach.* New York: Schirmer Books, 1979.

Ushioda, Ema. "Language Learning at University: Exploring the Role of Motivational Thinking." In *Motivation and Second Language Acquisition*, ed. Zoltán Dörnyei and Richard Schmidt, 93-125. Honolulu, HI: Second Language Teaching and Curriculum Center, 2001.

Ushioda, Ema and Zoltán Dörnyei. "Motivation, Language Identities, and the L2 Self: a Theoretical Overview." In *Motivation, Language Identity and the L2 Self,* ed. Zoltán Dörnyei and Ema Ushioda, 1-8. Buffalo, NY: Multilingual Matters, 2009.

Vineyard, Missy. *How You Stand, How You Move, How You Live: Learning the Alexander Technique to Explore your Mind-Body Connection and Achieve Self-Mastery.* New York: Marlowe & Co., 2007.

Wallace, W. "Memory for Music: Effect of Melody on the Recall of Text." *Journal of Experimental Psychology: Learning, Memory, Cognition* 20/6 (1994): 1471-1485.

Wallin, Nils L.,Björn Merker, and Steven Brown, eds. *The Origins of Music*, Cambridge, MA: MIT Press, 2000.

Wapnick, Joel, Gary Bourassa, and Joanne Sampson. "The Perception of Tonal Intervals in Isolation and in Melodic Context," *Psychomusicology* 2 (1982): 21-37.

Warch, Willard. *Our First 100 Years: A Brief History of the Oberlin College Conservatory of Music*. Oberlin College, 1967.

Waters, Andrew J. and Geoffrey Underwood. "Processing Pitch and Temporal Structures in Music Reading: Independent or Interactive Processing Mechanisms?" *European Journal of Cognitive Psychology* 11/4 (1999): 531-553.

Wennerstrom, Mary H. "The Undergraduate Core Music Curriculum at Indiana University." *Journal of Music Theory Pedagogy* 3 (1989): 153-176.

Westergaard, Peter. "What Theorists Do." *College Music Symposium* 17/1 (Spring 1977): 143-149.

White, John D. *Guidelines for College Teaching of Music Theory.* Scarecrow Press, 1981.

Wickens, C.D. "Attention and Skilled Performance." In *Human Skills*, 2nd ed., ed. D.H. Holding, 71-105. New York: John Wiley, 1989.

Wigfield, Allan. "Reading Motivation: A Domain Specific Approach to Motivation." *Educational Psychologist* 3/2 (1997): 59-68.

Wigfield, Allan and Steven R. Asher. "Social and Motivational Influences on Reading." In *Handbook of Reading Research*, ed. P. David Pearson et al, 423-452. New York: Longman, 1984.

Williamon, Aaron, ed. *Musical Excellence: Strategies and Techniques to Enhance Performance.* New York: Oxford University Press, 2004.

Willoughby, David. "Comprehensive Musicianship: Some Encouraging Words." *College Music Symposium* (Spring 1982): 55-64.

Winnick, William. "Hybrid Methods in Sight-Singing." *Choral Journal* 28 (1987): 24-30.

Wolbers, Mark. "Singing in the Band Rehearsal," *Music Educators Journal* 89/2 (2002): 37-41.

Wolf, Thomas. "A Cognitive Model of Musical Sight Reading." *Journal of Psycholinguistic Research* 5/2 (1976): 143-171.

Wren, Sebastian. "Ten Myths about Learning to Read." SEDL Newsletter 2002. Accessed at http://www.sedl.org/pubs/sedl-letter/v14n03/2.html