

2011-05-03

# Effects of Bulimia Nervosa on the Voice: A Guide for Voice Teachers

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UNIVERSITY OF MIAMI

EFFECTS OF  
BULIMIA NERVOSA  
ON THE VOICE: A GUIDE FOR VOICE TEACHERS

By

Juanita Marchand Knight

A DOCTORAL ESSAY

Submitted to the Faculty  
of the University of Miami  
in partial fulfillment of the requirements for  
the degree of Doctor of Musical Arts

Coral Gables, Florida

May 2011

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The Effects of Bulimia Nervosa  
on the Voice:  
A Guide for Voice Teachers

(D.M.A., Vocal Pedagogy and Performance)  
(May 2011)

Abstract of a doctoral essay at the University of Miami

Doctoral essay supervised by Dr. Esther Jane Hardenbergh.  
No. of pages in text. (127)

The purpose of this essay is to compile a list of symptoms to aid voice teachers in the early detection of vocal problems resulting from bulimic behavior. Bulimia nervosa (BN) is an eating disorder characterized by bingeing and purging and has a high rate of occurrence among the college population. Entertainers form a high risk group for development of BN yet the effects of BN on the voice are largely ignored in vocal literature.

The study begins with a literature review which links several factors that can influence the development of BN with “the singer’s personality.” The two main character traits that appear most frequently are perfectionism and anxiety. The study continues with a narrative presentation of interviews by the author with three voice specialists in different fields of voice research and treatment. The research questions on which the interview portion of the study were based are: 1) Are otolaryngologists seeing an increase in vocal problems associated with eating disorders?; 2) Is there a belief among voice specialists that singer-actors are a high risk group for the development of eating disorders?; 3) What vocal symptoms should voice teachers watch and listen for if they suspect a student is bulimic?; 4) How should the voice teacher approach the recommendation of treatment, care, and use of the bulimic voice? This portion of the

paper includes a clear and concise list of symptoms associated with BN that are easily identifiable by sight or sound.

The paper concludes with a summary of the study results, suggestions for voice teachers training singers with the disorder, and ideas for further research.

## ACKNOWLEDGEMENTS

To my parents and constant cheering section, Caroline and Gaston Marchand: Your formation, support, intellectual input, and incredible computer skills have helped me tremendously in this endeavor. Thank you for your patience and your willingness to make the trip from Montreal to Miami countless times.

To my cousin, Lee Paula Springer: Thank you for being my one-woman support group and for growing up with me. You are the sister I always prayed for and I would not have made it through this degree without your friendship and inspiration.

To all the Springers and Marchands: I am so blessed to call you family and privileged to count you as my friends.

To Dr. Hardenbergh: Thanks for always telling me to go for it. Whatever the challenge put before me, you always believed I would get through it, no matter how much I protested.

To Dr. Zdzinski: The interest you take in your students is truly inspiring. Thank you for all your enthusiasm, encouragement, and guidance through the IRB process. I am proud and grateful to have worked with you on this paper.

To my committee, my professors, and the staff at UM: Thank you for committing your time to my education and to this project.

To Mr. O'Brien: You were the kind of teacher and coach that I aspire to be. The way you touched each and every one of your students continues to move and motivate me. You are missed, loved, and never forgotten.

To the experts: Dr. Morrison, Dr. Peeler, and Dr. Lundy: Without you, this paper would not have happened. Thank you for sharing your time and wisdom with me. I am eternally grateful to you for the legacy of your work and for your readiness to instruct.

To my St. Patrick's Family: Being away from my home and country has been a tremendous challenge. I am eternally grateful to Mark Spencer, choir director at St. Patrick Catholic Church, and the choir for being my surrogate family and opening so many doors for me. I would also like to thank Mrs. Bertha Moro, principal at St. Patrick Catholic School, and the entire faculty for giving me the chance to teach. And to my students, thank you for coming to school each morning with joy in your hearts and smiles on your faces.

To my in-laws: Thank you for welcoming me into your families.

To my husband, Jeffrey Knight: You have been my encouragement, my hope, my editor, my cook, and my housekeeper whenever needed. I look forward to sharing my future with you and I look forward especially to the upcoming birth of our first son (who has been the most tremendous source of inspiration).

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## CHAPTER 1

### INTRODUCTION

Eating disorders (ED), such as anorexia nervosa (AN), associated with self starvation, and bulimia nervosa (BN), or bingeing<sup>1</sup> followed by compensatory purging, are rampant in American society. Statistics show BN to be the more prevalent of the maladies, with experts estimating that one and one half million Americans suffer with BN.<sup>2</sup> College aged people are at highest risk for developing this condition.<sup>3</sup> It is therefore likely that many voice students are succumbing to this illness as well. Unfortunately, little literature exists at this time to help voice teachers recognize the vocal problems associated with ED. It is the purpose of this paper to compile a list of symptoms to aid voice teachers in the early detection of vocal problems resulting from bulimic behavior.

People between the ages of 17-23 form one of the groups most at risk for ED. This suggests that the percentage of college students suffering from BN or AN might be relatively high. It is also possible that the occurrence of BN is higher in certain academic departments than in others. If the character traits of singers are similar to the character traits of bulimics or if the unique pressures of vocal performance increase voice students'

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<sup>1</sup> Two spellings of this word are currently in use: bingeing and binging. See <http://www.thefreedictionary.com/bingeing>, "binge," and <http://www.merriam-webster.com/dictionary/bingeing>, "bingeing."

<sup>2</sup> Visit the website [http://www.wrongdiagnosis.com/b/bulimia\\_nervosa/stats.htm](http://www.wrongdiagnosis.com/b/bulimia_nervosa/stats.htm) for more statistics on BN.

<sup>3</sup>Richard A. Gordon, *Eating Disorders: Anatomy of a Social Epidemic*. 2nd ed. (Malden: Blackwell Publishers Ltd., 2000): 45.

likelihood to rely on coping mechanisms, then voice students may form a high risk group for the development of BN. In either case, there is a great need for this study.

By the mid-1980s BN and AN had reached “epidemic” proportions yet little was known about these disorders or how to effectively treat them.<sup>4</sup> Most of the current literature estimates that four percent of American women suffer from BN and that one in one-hundred-eighty-one Americans suffer from the disorder, outnumbering anorexics 2:1. Approximately ten percent of bulimics are male.<sup>5</sup> Pipher claimed in 1997, “Psychologists are now estimating the incidence rate for bulimia among college-aged women to be as high as one in every four.”<sup>6</sup>

It is of no surprise that vocal pedagogues are generally unaware of this disease and its effects if professionals in other fields and the general population are ignorant of it as well. Almost fifty years after the discovery of BN and AN, the stigma and shame associated with the disorders remain. Much is still misunderstood about these illnesses, even within the field of medicine. Frost, Murphy, Webster, and Schmidt say,

Despite the serious nature of these disorders there is a prevailing view among medical professionals that eating disorders are not genuine illnesses. Many health professionals hold stigmatizing attitudes toward eating disorders, based on the belief that they are self-inflicted. Compared to patients with diabetes, obesity, or

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<sup>4</sup> See Mary Pipher, Ph.D., *Hunger Pains: The Modern Woman's Tragic Quest for Thinness* (New York: The Random House Publishing Group, 1995): 2.

<sup>5</sup> Visit the website <http://www.ANRED.com> and see Pipher, *Hunger Pains*, and Kathryn J. Zerbe, *The Body Betrayed: A Deeper Understanding of Women, Eating Disorders, and Treatment* (Carlsbad: Gürze Books, 1993).

<sup>6</sup> Pipher, *Hunger Pains*, 46.

schizophrenia those with eating disorders are less well-liked by medical and nursing staff – including psychiatrists.<sup>7</sup>

Frost et al.'s 2003 study concluded that between 1996 and 2001, only half as many articles were published on eating disorders than on panic disorder (an anxiety disorder characterized by panic attacks, attacks of intense fear with physical symptoms) and/or agoraphobia (literally, “fear of the market place;” fear of being in places from which escape is impossible) despite the fact that eating disorders are often fatal, unlike panic disorder and agoraphobia.<sup>8</sup>

Perhaps it is because little is understood about BN that secrecy surrounds the disorder. As a result, patients may be inclined towards dishonesty and research may not present an accurate reflection of reality. It is impossible to say how many cases of BN go unreported and what the true gravity is of the cases reported. The emergence of sub-threshold bulimia, an ED in its own right which does not meet enough of the diagnostic criteria to be considered full blown BN, further confuses the issue of diagnosis. Compulsive over-eating (CO) and BN are both thought to be forms of food addiction,<sup>9</sup> while AN, or self starvation, sometimes triggers BN. Polivy and Herman explain:

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<sup>7</sup> Susie Frost, Rebecca Murphy, Peter Webster, and Ulrike Schmidt, “Are Top Journals Biased Against Eating Disorder Topics?” *American Journal of Psychiatry* 160, no. 2 (February 2003): 363.

<sup>8</sup> For more information on agoraphobia and panic disorder visit the website <http://panicdisorder.about.com/cs/agorabasics/a/agoraphobia101.htm>.

<sup>9</sup> Ira M. Sacker and Marc A. Zimmer offer the theory that bulimics are actually addicted to the purge and not, as is commonly believed, to food. “Getting hooked is exactly what happens. The purging process and aftereffects can be so completely gratifying for the bulimic that he or she can become totally focused on repeating that same intensely rewarding experience.” (Ira M. Sacker and Marc A. Zimmer, *Dying to be Thin*, 28). They refer to a bulimic’s own description of the purge as “orgasmic” and discuss a wonderfully relaxed feeling and the deep sleep that often follow purging. (Ibid, 28).

The literature displays an uneasy balance between studies exploring the role of particular putative causal factors and theories that attempt to combine such factors into a comprehensive whole. The main obstacles facing these attempts are, first and foremost, the virtual impossibility of conducting true experimental research in which a putative causal factor is manipulated, and secondly, the difficulty of combining all such factors into a model that is not unwieldy.<sup>10</sup>

Co-morbidity, the presence of other physical, psychological, emotional, or psychiatric disturbances, is common with ED. Precise diagnosis and treatment can be complicated. Several disorders, such as depression, bipolar disorder, borderline personality disorder, substance abuse, and anxiety disorders, including obsessive-compulsive disorder and panic disorder, are commonly associated with ED. Physical complications abound as well. It is probable that the malnutrition resultant from ED causes or increases depression. In these cases, treatment of the ED will improve the symptoms of depression. However, in cases where the ED is a symptom of an innate disorder or disorders, treatment of all disorders is necessary. It is crucial that people understand the potential severity of these illnesses. Professional health care is necessary.<sup>11</sup>

The causes of BN are debated within the field of psychology. While Pipher places a strong emphasis on the effects of advertising,<sup>12</sup> Polivy and Herman say that our

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<sup>10</sup> Janet Polivy and C. Peter Herman, "Causes of Eating Disorders," *Annual Review of Psychology* 53 (2002): 190.

<sup>11</sup> Please refer to Appendix A, page 84, for the DSM IV TR diagnostic criteria for BN and for information on co-morbidity.

<sup>12</sup> Pipher, "Preface and Acknowledgements," *Hunger Pains*, vii-ix.

culture's focus on thinness cannot explain why some develop ED when most do not.<sup>13</sup> It is true that eating disorders are primarily a disease of wealthy societies where food is abundant;<sup>14</sup> however, ED would seem to be the result of a complex combination of biological, sociological, emotional, and psychological factors rather than a pathological desire to be thin.

Traditionally, eating disorders have been viewed as primarily a female (and therefore a feminist) problem.<sup>15</sup> Because of this, little attention has been focused on studying males with eating disorders. The lack of research and information in this area makes admission more stigmatizing for men. However, according to Anorexia Nervosa and Related Eating Disorders, Inc. (ANRED), a website run by a non-profit organization created in 1979 by a team of eating disorder experts, people of both genders who work in certain fields are at equal risk: "Because of intense demands for thinness, some people are at high risk for eating disorders -- wrestlers, jockeys, cheerleaders, sorority members, socialites, dancers, gymnasts, runners, models, actresses, entertainers..."<sup>16</sup>

Perfectionism, the setting of unrealistic or unattainable goals, is also known to be associated with the development of eating disorders. The perfectionist perceives any error, large or small, as a failure. In order to deal with stress, pressure, and anxiety,

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<sup>13</sup> Polivy and Herman, "Causes of Eating Disorders," 191.

<sup>14</sup> For further information, see Polivy and Herman, "Causes of Eating Disorders."

<sup>15</sup> Erica Reischer and Kathryn S. Koo, "The Body Beautiful: Symbolism and Agency in the Social World," *Annual Review of Anthropology* 33 (2004): 297-317.

<sup>16</sup> N/A, "Who is at Risk for Developing Bulimia?" *Anorexia Nervosa and Related Eating Disorders, Inc.* (Updated January 16, 2006) under "Who is at Risk for Developing an Eating Disorder?" <http://ANRED.com> (accessed September 6, 2007).

coping mechanisms such as alcoholism, ED, and self mutilation are developed.<sup>17</sup> When faced with failure, or even the possibility of failure, people depend on these coping mechanisms to alleviate pain and tension. Many singers, who work in a highly competitive field, are known to be perfectionists and face high levels of anxiety.

There is evidence linking perfectionism, obsessive thoughts or repetitive behaviors, and BN.<sup>18</sup> Problems with stress management and self-esteem are also associated with the disorder. Bulimics often present with a history of being teased or abused, and may have suffered a trauma.<sup>19</sup> They may have also received praise in the past for what they perceive to be their self-control.

Emotional stress has also been linked to the development of coping mechanisms. Sataloff says, “Psychological stress is intrinsic to vocal performance. For most people, sharing emotions is stressful even in the privacy of home, let alone under spotlights in front of a room full of people.”<sup>20</sup> Some of the unique demands that affect singers daily do not often touch other students. In required acting and theater classes, they are asked to improvise, share emotions, draw on personal experiences, and they are usually offered

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<sup>17</sup>See Ellen A. Skinner and Melanie J. Zimmer-Gembeck, “The Development of Coping,” *Annual Review of Psychology* 58 (January 2007): 119-144.

<sup>18</sup> Polivy and Herman, “Causes of Eating Disorders,” 199.

<sup>19</sup> It must be understood that the perfectionist will receive criticism, even of the constructive sort, as an indication of failure and thus may feel traumatized and abused.

<sup>20</sup> Deborah Caputo Rosen and Robert Thayer Sataloff “Psychological Aspects of Voice Disorders,” in *Vocal Health and Pedagogy*, ed. Robert Thayer Sataloff (San Diego: Singular Publishing Group, Inc., 1998), 250.

“constructive criticism” in front of the class. Students who are particularly sensitive or are ill prepared for this type of sharing activity may respond very negatively.

If singers are singled out during rehearsals of staged or concerted works, they can have difficulty separating voice from self.<sup>21</sup> The “you are your voice” phenomenon is discussed by Shelton: “Singers struggle with “the separation of the self-image from the voice. This is a major difficulty, for ‘...the singer’s voice is (or is often perceived to be) everything. The voice is in, is therefore of, indeed *is* the self.’”<sup>22</sup>

David J. Sternbach explains further:

Lessons and rehearsals mean hearing a lot of criticism. And then, performing may carry more emotional challenge for students who have not yet fully consolidated their technique or developed the kind of confidence in their abilities that professional musicians rely on.<sup>23</sup>

Dance and movement, also important elements of Opera and Music-Theater, can pose a problem for singers. It can be difficult for trained vocalists, who have achieved a relatively high level of proficiency in their chosen area, to attempt something new and unknown, at which they may not have immediate ease, in front of peers and audiences.

In a Music Education article about developing new skills, Jody Miller, a highly skilled recorder player and teacher, says,

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<sup>21</sup>Laurie S. Shelton, “Vocal Problem or Body Block? A Look at the Psyche of the Singer,” *Journal of Singing* 53, no. 5 (May-June 1997): 9-13, 16-18.

<sup>22</sup> Laurie S. Shelton quoting Wormhountd in, “Vocal Problems or Body Block? A Look at the Psyche of the Singer,” *Journal of Singing* 53, no. 5 (May-June 1997): 10.

<sup>23</sup> David J. Sternbach, “Stress in the Lives of Music Students,” *Music Educators Journal* 94, no. 3 (January 2008): 42.

I wish I could play harpsichord well enough to accompany my students. I can fumble through parts, but I can't play on a concert with my students. Being a mediocre player on harpsichord is disheartening when I can see the music and know what the resulting sound should be.

So many things go through my mind and I can assume that people who are excellent poets, mathematicians, or hairdressers are bothered to some degree by undertaking a task that may not equal their demonstrated ability in another aspect of their life (and you would not want this recorder player to cut your hair!). Despite my wish to play harpsichord well, I don't have the perseverance it takes to go through all the stages necessary to become a proficient performer.<sup>24</sup>

Undergraduate level singers today face rigorous programs of study. Heavy academic course loads coupled with lengthy and demanding ensemble rehearsals mean that young singers are required to be in class more than the average student, often have to skip meals, and regularly function on little sleep.<sup>25</sup> During performance weeks, ensemble rehearsals are extended to evenings and weekends and take precedence over all other courses. Students involved in these ensembles are “excused” from other classes that conflict with dress rehearsals and performances. Having to explain excessive absences to professors outside of the music school can add even more stress to their situation. University level opera performances and large scale choral concerts are often reviewed in major newspapers. Students understand that in addition to risking their own egos, they are responsible for the good or bad publicity brought to the university through

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<sup>24</sup> Jody Miller, “Education: Teaching an Old Dog New Tricks,” *American Recorder* 46, no 3 (May 2005): 17.

<sup>25</sup> In November of 2007, The University of Miami chorale, a 1 credit ensemble, was meeting Monday, Wednesday, and Friday from 11:15am until 12:05pm as well as Tuesday and Thursday from 11:00am until 12:15pm. The Frost Opera Theater of the University of Miami, another 1 credit ensemble, was meeting Monday, Wednesday, and Friday from 2:35pm until 4:25pm. Both courses met for a total of 6 hours on a regular school week. During a performance week, the meeting time may easily have doubled.

such reviews. Beginning singers may not be prepared for this type of obligation.

According to Sternbach,

Pressures on all students - including music students - in our schools seem to be constantly increasing. Each year there is more to be learned as the body of knowledge grows exponentially. Given the increased competition for college placement, many high school students are taking more Advanced Placement classes, increasing their extracurricular activities, and taking part in team sports and volunteer activities to beef up their resumes. Educators and writers have been concerned about this for a long time...<sup>26</sup>

Music students, along with young dancers and actors, share all the common stressors of school and everyday life that affect everyone, and then walk out on stage to face the terrors of live performance. On that stage, they want to get it right; any mistakes are exposed to everyone, and there are no second chances. So they practice, and they practice harder - under the pressure of ever-increasing technical standards and a push for faster skill acquisition.<sup>27</sup>

Sternbach also speaks of the unusually high time constraints placed on music students due to lengthy personal and group practice time, the lack of socialization that occurs when young people spend a lot of time alone, and the poor physical condition that may result from staying indoors, seated and practicing.<sup>28</sup>

For the professional singer, strenuous performance and travel schedules can elevate stress. Many emerging professionals must work to supplement their income and many established singers maintain full or part-time teaching loads. Combined with the poor diet and lack of sleep that often result from traveling and time constraints, public scrutiny attached to performance, and the same emotional stresses faced by voice

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<sup>26</sup> Sternbach, "Stress in the Lives of Music Students," 43.

<sup>27</sup> Ibid., 44.

<sup>28</sup> See Sternbach, "Stress in the Lives of Music Students," for further information.

students, these elements can create anxiety. When considering the singer's schedule alone, one can see how there might be a high level of anxiety among singers and voice students.

Much of the literature concerned with the psychology of performers focuses specifically on performance anxiety. While performance anxiety may seem to be something that occurs only before performances and not during normal time, consider a typical day in the life of a voice student. This might include a rehearsal for a choral ensemble, a performance in voice forum or master class, a voice lesson, sight-singing class, and an opera rehearsal. For the voice student with performance anxiety, this can add up to constant stress. Radocy and Boyle say,

While definitions and descriptions of performance anxiety usually relate to the performance task at hand, anxiety also is a function of various conditions occurring well before performance time. Taking this into account, LeBlanc (1994) developed an 11-level hierarchical model of sources of variation in music performance anxiety. Organized across time from planning for a public performance to receiving feedback following it, the model categorizes sources contributing to anxiety that arise within the performer and from circumstances surrounding him or her.<sup>29</sup>

Many of LeBlanc's hierarchical levels have nothing to do with the actual day of performance but with the performer's mental and emotional state leading up to and following the performance, proving that performance anxiety can be an ongoing problem, crippling for the singer.<sup>30</sup>

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<sup>29</sup> Rudolf E. Radocy and J. David Boyle, *Psychological Foundations of Musical Behavior* (Springfield: Charles C. Thomas, Publisher, Ltd., 2003): 281.

<sup>30</sup> Albert LeBlanc, "A Theory of Music Performance Anxiety," *Quarterly Journal of Music Teaching and Learning* 5, no. 4 (Winter 1994): 60-69.

Obesity causes approximately 374,239 deaths each year in America. This statistic comes to us via David B. Allison, Kevin R. Fontaine, JoAnn E. Manson, June Stevens, Theodore B. VanItallie, and the Center for Disease Control (CDC).<sup>31</sup> The Center for Consumer Freedom (CCF) however, points out that many obesity studies, including Allison's, received funding from pharmaceutical companies that produce anti-obesity drugs.

...Prominent obesity researcher David Allison, who was the lead author of the 1999 *JAMA* study that concluded obesity was responsible for 300 000 [sic] deaths in 1990. Allison has accepted funding from virtually every major business in the weight-loss industry. That includes big drug companies that make weight-loss pills like Xenical and Meridia, popular diet companies like Jenny Craig, WeightWatchers, and SlimFast Foods, and the makers of the deadly "fen-phen" appetite suppressant combination - as well as the lawyers who defended those companies in court.<sup>32</sup>

Weight loss companies such as Weight Watchers and Jenny Craig are benefitting from this obesity crisis, be it real, exaggerated, or imagined.<sup>33</sup>

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<sup>31</sup> David B. Allison, Kevin R. Fontaine, JoAnn E. Manson, June Stevens, and Theodore B. VanItallie, "Annual Deaths Attributable to Obesity in the United States," *JAMA* 282, no 16 (October 1999): 1536.

<sup>32</sup> The Center for Consumer Freedom, *An Epidemic of Obesity Myths*, (Washington D.C.: The Center for Consumer Freedom, 2005): 52. *Google Books*  
[http://books.google.com/books?id=IVHI10JQRhsC&pg=PA51&lpg=PA51&dq=center+for+consumer+freedom+david+allison&source=web&ots=G7iv7JyDRN&sig=B34lcFBq-obYBsh7m5\\_oAIlk8mM&hl=en&sa=X&oi=book\\_result&resnum=3&ct=result#PPA50,M1](http://books.google.com/books?id=IVHI10JQRhsC&pg=PA51&lpg=PA51&dq=center+for+consumer+freedom+david+allison&source=web&ots=G7iv7JyDRN&sig=B34lcFBq-obYBsh7m5_oAIlk8mM&hl=en&sa=X&oi=book_result&resnum=3&ct=result#PPA50,M1) (accessed June 24, 2008).

<sup>33</sup> In 2006, Nestle purchased Jenny Craig from ACI Capital and Mid Ocean Partners for six hundred million dollars, more than five times the amount the previous owners paid for the majority interest in 2002. Weight Watchers International, Inc. reported a total revenue of 1,467,16M in December 2007, up from the 1,151,251M declared in December, 2005. For more information see, "Jenny Craig Sale Reaps a Fat Profit," *The Age*, available from <http://www.theage.com.au/articles/2006/06/19/1150701484865.html> and "Income Statement" *Yahoo Finance, Weight Watchers International, inc.*, available from <http://finance.yahoo.com/q/qs?s=WTW&annual> (accessed June 26, 2008).

This is only one of the many ways the media is thought to influence our perceptions about weight. Popular singing star Kelly Clarkson has come forward as a bulimic and actress and fashion mogul Mary Kate Olsen's battle with anorexia nervosa has been highly publicized. Certainly, the pressure associated with being a pop-culture icon and young performer is staggering. There is constant pressure to maintain a young appearance and slender figure. As consumers of pop-culture, young opera singers, opera audiences, and directors are influenced by film, television, music media, and advertising as well. In addition to this, music-theater departments, notoriously inflexible in their casting conventions, are interacting increasingly with opera departments. Opera is not without conventions, and today there is a rising tendency in opera to cast according to appearance. Blier says,

The visual criteria in opera have become almost as stringent as those of musical theater. Rare voice types, such as dramatic sopranos and Verdi mezzos, are allowed some leeway and some girth. But if you're a lyric mezzo or a Mozart baritone, you'd better hire a trainer, and fast.<sup>34</sup>

He continues:

[Audiences] go to see a *show*, and they care about entertainment more than they care about musical delicacy. The more opera imitates television and the movies, the easier it is for image-oriented audiences to relate to what they're seeing and hearing.<sup>35</sup>

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<sup>34</sup> Steven Blier, "The Fit Lady Sings," *Opera News* 66, no. 1 (July 2001): 13.

<sup>35</sup> *Ibid.*, 14.

Evidence of this appears in articles published in *Opera News* about sopranos Sharon Sweet and Deborah Voigt losing jobs because of their weight.<sup>36</sup>

BN, like alcoholism and drug addiction, can be extremely difficult to treat because it is so problematic to approach. Addicts lie and the people who surround them are often prevented from confronting them by fear or by law. Those closest to the addict are often thought to be in denial or to contribute to the disease by enabling the destructive behaviors. This begs the question: What role can voice teachers play in the detection of BN? University rules may prevent the teacher from broaching difficult personal matters with their students. If the voice teacher hears symptoms of something serious, they may ask questions and make suggestions, but are often prevented from taking any action. Only if the student makes an admission of illness, can the teacher proceed actively. However, a vocal problem of undetermined nature may cause undue frustration for both the student and teacher. Being able to recognize vocal disorders can help the professor teach effectively. Though the teacher may not feel able to directly confront the issue with the student, the nature of their relationship and the types of questions asked by the teacher may encourage truthfulness on the part of the student.

Dentists are often considered to be the first line of defense against BN because they see the degeneration of tooth enamel as a result of repeated vomiting. From an aural standpoint, voice teachers can play a big role in the early detection of vocal pathologies

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<sup>36</sup>Brian Kellow, "On the Beat," *Opera News* 64, no. 8 (February 2000): 10, and Barry Singer, "Turning Point," *Opera News* 71, no. 4 (October 2006): 18-22.

and problems. It is curious that despite this fact, little has been published on the prevalence, possible causes, and effects of eating disorders in singers.

Much has been made of the private voice teacher filling the role of the student's therapist. Shelton says that a singer's emotional state can be responsible for any number of vocal and physical problems. Going as far as to say that every voice teacher should be educated in psychology, she contends that in order to train a voice, a teacher must often help heal a psyche.<sup>37</sup> Patenaude takes a less dramatic stance but agrees with some of Shelton's ideas:

The emotional and physical well being of singers has significant bearing on the healthy function of the singing voice, making it inevitable that the teacher will be faced with issues that are nontechnical. Most voice teachers are not certified psychoanalysts or psychiatrists, yet what one says to singers and how one advises them will play a great role in their personal and professional lives ... The teacher may need to respond to problems as complex and varied as marital relationships, financial issues, physical and mental health problems, and other kinds of life altering situations ... It is critically important to remember, however, that voice teachers cannot take it upon themselves to treat serious disorders, such as paranoia or manic depression. A good teacher recognizes his or her limitations and knows when to recommend outside professional help.<sup>38</sup>

Unfortunately, research on the vocal effects of BN is very limited, and voice teachers may be unaware of the extent to which this disorder affects the student population. Morrison and Morris stated in their 1990 study:

An exhaustive "medline" search could unearth no past reference of a publication that mentioned a relationship between the forced habitual vomiting of the bulimia patient and a voice disorder, although Sataloff recommends considering the

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<sup>37</sup> Shelton, "Vocal Problem or Body Block?" 9.

<sup>38</sup> Joan Patenaude-Yarnell, "The Private Studio: The Teacher/Student Relationship," *Journal of Singing* 60 ,no. 4 (March-April 2004): 395.

diagnosis when thinned central incisor enamel is noted in the physical examination of a professional voice user, especially in the presence of reflux symptoms.<sup>39</sup>

Rothstein, referencing Morris and Morrison, published a study in 1998. The current author has found no other literature discussing the vocal effects of bulimia. Morrison and Morris also say,

The incidence of bulimia nervosa has been reported as being in the range of 2-4% of female adolescents and female young adults. It is felt by some to be higher than this, and in the portion of the young female population that aspires to performance on the stage, the incidence is possibly much higher. Therefore, for those of us who are otolaryngologists seeing patients with voice disorders, many of whom are young female singers or actors, we probably see patients affected by this type of eating disorder but we remain unaware of it.<sup>40</sup>

It is necessary to mention that no matter the stressors within the field of vocal performance, not all voice students will fall prey to BN and other coping mechanisms. Although there is evidence that many performance artists respond negatively to the demands of the profession, as will be shown in the literature review, some people thrive in competitive atmospheres and are able to manage heavy workloads and frequent criticism quite well.

While university regulations may bar professors from action, the need for further research in the area exists. It is important for teachers to understand what they may be battling in order that they may contend with the student. Morrison and Morris and ANRED point out that entertainers form a high risk group for ED. The current author

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<sup>39</sup> Murray D. Morrison and Brian D. Morris, "Dysphonia and Bulimia: Vomiting and Laryngeal Injury," *Journal of Voice* 4, no. 1 (1990): 76.

<sup>40</sup> *Ibid.*, 76.

believes that in light of the close relationship that develops between a voice teacher and student, as pointed out by Patenaude and others, the voice teacher may be able to guide the student towards health without broaching the subject of BN directly.

### *Purpose of the Study*

The purpose of this study is first, to establish, by examining the literature, that singers may be at greater risk than the general population for developing BN, and second, to create, by interviewing three prominent voice specialists, a list of the vocal symptoms resulting from repeated bingeing and purging for use by voice teachers.

### *Research Questions*

1. Are otolaryngologists seeing an increase in vocal problems associated with eating disorders?
2. Is there a belief among voice specialists that singer-actors are a high risk group for the development of eating disorders?
3. What vocal symptoms should voice teachers watch and listen for if they suspect a student is bulimic?
4. How should the voice teacher approach the recommendation of treatment, care, and use of the bulimic voice?

*Definition of Terms*

**Acid reflux disease:** A condition in which stomach acid and/or partially digested food come up from the stomach into the esophagus (and sometimes into the throat, nose, or mouth) because the esophageal sphincter does not close tightly enough to keep the contents of the stomach down. Also referred to as laryngopharyngeal reflux (LPR) and gastroesophageal reflux disease (GERD).

**Agoraphobia:** Fear of public places, open areas, and/or inability to escape.<sup>41</sup>

**Anorexia nervosa:** An eating disorder characterized by self-starvation.

**Arytenoids:** Small cartilages to which the vocal folds are attached.

**Asthenia:** Refers to a loss of muscle strength or energy.

**Bipolar disorder:** A disorder in which people experience extreme mood swings. Moods alternate between high and/or irritable (mania) and low (depression); also known as manic-depression.

**Borderline personality disorder:** A serious disorder in which people experience unstable moods, flawed self-image, feelings of anger and isolation, and impulsivity.

**Bulimia nervosa:** An eating disorder in which binges are followed by purging, either with laxatives and diuretics, by vomiting, or with compulsive exercising.

**Co-morbidity:** The presence of two or more diseases, disorders, or diagnoses in the same person at the same time.

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<sup>41</sup> The literal translation from the Greek is fear of the market place. People with agoraphobia often have panic disorder as well. For more information visit *Medicine Net* and see “Agoraphobia” and “Agoraphobia Main Article,” at <http://www.medterms.com/script/main/art.asp?articlekey=9946>.

**Compulsive over-eating disorder:** A disorder in which a person is unable to control the amount of food ingested; similar to the binge period in bulimia nervosa but without the compensatory purging behavior.

**Depression:** A disorder involving feelings of sadness, loss of interest, feelings of guilt, low-self worth, and often changes in eating and sleeping patterns.

**Disordered eating:** Refers to any disturbances or deviations from 'normal' eating patterns that do not qualify as a diagnosable eating disorder.

**Eating disorder:** Illnesses associated with disturbances in normal eating behavior and meeting specific criteria, such as those of the *Diagnostic and Statistic Manual of Mental Disorders*.

**Edema:** Edema is a condition of abnormally large fluid volume in the circulatory system or in tissues between the body's cells (interstitial spaces).<sup>42</sup>

**Endoscopy:** The process of examining the inside of hollow organs within the body for medical purposes using an endoscope.

**Erosive esophagitis:** Erosive esophagitis is a condition in which areas of the esophageal lining are inflamed and worn away.<sup>43</sup>

**Erythema:** Redness of tissue resulting from inflammation.

**Fach:** The German classification system of opera singers by voice type.

**Gastroesophageal reflux disease (GERD):** See acid reflux disease.

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<sup>42</sup>Creator unknown, *Answers.com*, "Edema," <http://www.answers.com/topic/edema> (accessed November 4, 2007).

<sup>43</sup>Creator unknown, *The Merck Manuals: Online Medical Library*, "Erosive Esophagitis," <http://www.merck.com/mmhe/sec09/ch120/ch120d.html> (accessed November 4, 2007).

**Gestaltist:** Refers to Gestalt psychology, which says the whole is more than the sum of its parts.

**Granuloma:** A mass of inflamed granulation tissue, usually associated with ulcerated infections.<sup>44</sup>

**International Phonetic Alphabet:** A set of symbols representing sounds that may be used in linguistics to transcribe accents or in music to serve as a pronunciation guide for foreign languages.

**Laryngopharyngeal reflux:** See acid reflux disease.

**Laryngeal web:** Usually a congenital abnormality found in newborns, when the vocal folds fail to split. In adults, it is usually the result of laryngeal injury and extensive scarring.

**Mania:** An unusually and often dangerously elevated mood state. Symptoms may include irritability, excitement, insomnia, risky sexual behavior, racing thoughts, notions of grandeur, etc.

**Manic depression:** See bipolar disorder.

**Muscle tension dysphonia:** A voice disorder resulting from muscle misuse.

**Obsessive compulsive disorder:** An anxiety disorder in which a person feels intrusive obsessions can only be assuaged with ritualized repetitive behaviors, known as compulsions.

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<sup>44</sup> *Answers.com*, "Granuloma," <http://www.answers.com/topic/granuloma> (accessed November 4, 2007).

**Otorhinolaryngologist:** Ear, nose and throat (larynx) doctor, commonly referred to as head and neck doctor or voice doctor, also referred to as otolaryngologist.

**Panic disorder:** Panic disorder is an anxiety disorder and is characterized by unexpected and repeated episodes of intense fear<sup>45</sup> accompanied by physical symptoms that may include chest pain, heart palpitations, shortness of breath, dizziness, or abdominal distress.<sup>46</sup>

**Parotid swelling:** Swelling of the salivary glands in front of the ears which results in puffy cheeks.

**Polypoid changes:** Refers to changes in the polyps (growths on the mucous membrane of the vocal cords.)

**Posterior commissure hypertrophy:** Mucosal hypertrophy of the posterior commissure epithelium is graded as mild when there is a mustache-like appearance of the posterior commissure mucosa, moderate when the posterior commissure is swollen enough to create a straight line across the back of the larynx, severe when there is bulging of the posterior larynx into the airway, and obstructing when a significant portion of the airway is obliterated.<sup>47</sup>

**Putative causal factor:** A supposed or generally accepted agent or determinant.

<sup>45</sup> These episodes are commonly referred to as panic attacks.

<sup>46</sup> N/A, *National Institute of Mental Health* "Panic Disorder," <http://www.nimh.nih.gov/health/topics/panic-disorder/index.shtml> (accessed June 28th, 2008).

<sup>47</sup> Peter C. Belafsky, Gregory N. Postma, Milan R. Amin, and James A. Kaufmann, "Symptoms and Findings of Laryngopharyngeal Reflux," *Ear, Nose, and Throat Journal* No volume given (September 2002): 2. [http://findarticles.com/p/articles/mi\\_m0BUM/is\\_9\\_81/ai\\_92281755/pg\\_2](http://findarticles.com/p/articles/mi_m0BUM/is_9_81/ai_92281755/pg_2) (accessed November 4, 2007).

**Schizophrenia:** A disorder in which a person has difficulty distinguishing between reality and delusions and/or hallucinations.

**Stroboscopy:** A technique that uses interrupted light to simulate slow motion.<sup>48</sup> By inserting a camera into the patient's nose or mouth, doctors are able to view and record the function of the patient's vocal apparatus.

**Sub-threshold bulimia:** A disorder resembling bulimia but that does not meet the exact diagnosis criteria for bulimia.

**Telangiectasia:** A vascular lesion formed by dilatation of a group of small blood vessels similar to spider veins or varicose veins. It occurs in all species but is most common in the liver of cattle. See also peliosis hepatis.<sup>49</sup>

**Ventricular obliteration:** When the laryngeal ventricle, the space between the true and false vocal folds, completely disappears due to swelling of both sets of vocal folds.

### *Organization of the Study*

A preliminary literature review will be completed by the author to establish that singers may be predisposed to certain coping mechanisms, especially BN, and that cases exist of severe vocal problems caused by suspected bulimic behavior. Once this connection has been made, an interview will be designed for voice specialists. All experts will have worked with singers for at least five years. The ultimate goal will be to

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<sup>48</sup> *The Vocal Resource*, "Stroboscopy," under "Glossary," <http://vocalresource.rutgers.edu/termss.htm> (accessed November 4, 2007).

<sup>49</sup> *Answers.com*, "Telangiectasia," <http://www.answers.com/topic/telangiectasia> (accessed November 4, 2007).

create a list of symptoms by which voice teachers can recognize BN and perhaps help with early detection to prevent further damage to the student's voice.

## CHAPTER 2

### LITERATURE REVIEW

Little research exists on the causes and effects of BN in singers. In order to determine whether voice students might be at greater risk than other students for developing the disorder, the current author has collected research related to the “singer’s personality” and the personality profiles of those at risk for developing BN. The literature selected was summarized, compared, and reviewed.

Several articles have been published discussing the current trend in opera towards thinness and the effects of performer’s appearance on audience reception. A selection of these articles was summarized, reviewed, and related to the literature linking general cultural trends and ED. The chapter continues with a review of the literature which connects BN and GERD and discusses the possible vocal effects of both disorders.

#### *Perfectionism and Singers; Perfectionism and Bulimia Nervosa*

An examination of the literature reveals that the first and most important character trait shared by singers and bulimics is perfectionism. Perfectionists set unrealistically high goals and perceive even the smallest errors as failures. This leads to a high level of anxiety and, in turn, high anxiety has been shown to lead to repetitive, obsessive, and perfectionist disorders.<sup>50</sup>

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<sup>50</sup> Myra Cooper, *The Psychology of Bulimia Nervosa: A Cognitive Perspective* (Oxford: Oxford University Press, 2003): 21-22, and Janet Polivy and C. Peter Herman, “Causes of Eating Disorders,” *Annual Review of Psychology* 53 (2002): 199.

In her 1992 article, Wormhoudt, discusses at length the emotional and psychological state of teenagers.<sup>51</sup> This is relevant to this essay since the majority of entering freshmen are between the ages of 17 and 19. According to Wormhoudt, perfectionism and high anxiety levels are more common amongst singers than the rest of the population. She says,

Most singers are perfectionists. They worry whether they are on pitch, whether the sound is good, whether the voice will break, whether they have enough breath for he [sic] phrase, and so on and on. While they are hunting for all these things to go wrong, they are interfering with the confidence that allows the sound to flow.<sup>52</sup>

Harvey, in her 1997 article, discusses the competitive nature of the singing profession and the self-critical nature of singers. Being overly critical of the self can lead to self-oriented perfectionism whereas receiving criticism from others, a by-product of being in a constantly competitive environment, might lead to social perfectionism. According to Harvey, these traits put singers at risk for illness.<sup>53</sup> Some people might develop AN or BN as a means of coping with the stress, self-criticism, and lack of stability that come with singing.

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<sup>51</sup> Pearl Shinn Wormhoudt, "On the Psychology of Singing," *Journal of Research in Singing and Applied Vocal Pedagogy* 16 no. 1 (December 1992): 1-12.

<sup>52</sup> Wormhoudt, "On the Psychology of Singing," 8.

<sup>53</sup> Pamela L. Harvey, "LaryngoSCOPE: Nutrition and the Singing Voice," *Journal of Singing* 54, no. 1 (September-October, 1997): 41-47.

Vennard, in “The Psychology of the Pupil Teacher Relationship,”<sup>54</sup> discusses the ego at length because he believes that a strong ego is necessary (and often innate) in a good performer. He discusses the libidinous nature of the student-teacher relationship, meaning that the student must put faith in the teacher and the teacher must validate the student’s ego. This must be an affirmative and reciprocal relationship. The teacher should aim to phrase critical comments positively, thereby affirming the student. The student, in turn, can improve because they feel safe and encouraged, and their improvement and success affirms the teacher. Vennard believes that the relationship must also be possessive. Because the teacher is risking his own self-confidence by placing faith in the student, the student must not go to another teacher for guidance.

Considering Wormhoudt and Harvey’s statements that singers are often self-critical perfectionists and Vennard’s point of view, one can see the very distinct possibility that singers’ egos may be damaged by their own self-criticism or by a poor relationship with their voice teachers. Surely, the possessive, reciprocal, libidinous relationship Vennard discusses also exists between the singer and the vocal coach, the singer and the acting coach, and any other teacher of vocal or stage arts the singer comes into contact with, especially in a one-on-one setting. This means there are ample opportunities for the ego to suffer damage. If the singer’s ego is as important to good singing as Vennard claims, then the singer with a damaged ego is more likely to fail.

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<sup>54</sup> William Vennard, “The Psychology of the Pupil Teacher Relationship,” *American Music Teacher* 47, no.3 (December 1997-January 1998): 24-27.

Perfectionists believe they fail every time they make an error. One can see how low self-esteem, perfectionism, and anxiety feed one another.

Hewitt, Gordon, and Ediger's 1995 study<sup>55</sup> found that "self-oriented" perfectionism was associated with AN but that other types of perfectionism, especially the social types, were associated with other ED, and therefore BN. "Socially prescribed perfectionism" is the belief that others expect and will accept nothing less than perfection from an individual. It is essential to these individuals' self-esteem that they match a model of perfection. They must be accepted by others. It is necessary that they present an image of perfection, that they not appear imperfect, or that they keep their flaws concealed. All of these behaviors manifest as compensation for low self-esteem. To the perfectionist, minute flaws and errors are equivalent to huge failures. Therefore the perfectionist is likely to experience frequent failures (inability to meet unrealistically high standards imposed by the self or "others"). Denial, lying, and concealment are associated with ED. These traits can result in a refusal or inability to divulge difficulties to the self and others. Behaviors and characteristics such as these are associated with both bulimics and perfectionists.

Taking the idea of perfectionism and ED one step further, Ruggiero, Levi, Ciuna, and Sassaroli conducted a study of high school girls in 2003 to determine whether particularly stressful situations brought out perfectionist traits and increased the desire to

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<sup>55</sup>Paul L. Hewitt, Gordon L. Flett, and Evelyn Ediger, "Perfectionism Traits and Perfectionistic Self-Presentation in Eating Disorder Attitudes, Characteristics, and Symptoms," *International Journal of Eating Disorders* 18, no. 4 (1995): 317-326.

be thin.<sup>56</sup> It seems that when coupled with perfectionism, stress may trigger ED. Since perfectionists perceive ordinary mistakes as disastrous, they are more often in stressful situations than ‘normal’ people. As in other areas of their lives, perfectionists set unrealistic goals where weight, body shape, and diet are concerned. In order to determine whether during a stressful time (an exam), female high school students would experience an increase in disturbed eating patterns or body dissatisfaction, Ruggiero et al. tested the girls’ body dissatisfaction and drive for thinness at three different times: (1) on a normal day; (2) on an exam day; and (3) on the day they received the grade from the exam. They found that there was a correlation between perfectionism, stress, and disordered eating. A second study, very similar to the above mentioned one, was conducted by Ruggiero and Sassaroli in 2005. A larger sample group was used for this study and self-esteem and worry were added to the elements being tested.<sup>57</sup>

#### *Characteristics of Singers and Bulimics (Excluding Perfectionism)*

Other traits shared by singers and bulimics include high anxiety and stress levels, inability to cope easily with rejection, and repressed or suppressed anger. Wormhoudt explains that though adolescents may sound and look grown up, people in this age group

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<sup>56</sup> Giovanni Maria Ruggiero, Deborah Levi, Arcangelo Ciuna, and Sandra Sassaroli, “Stress Situation Reveals an Association between Perfectionism and Drive for Thinness,” *International Journal of Eating Disorders* 34 (2003): 220-226.

<sup>57</sup> Sandra Sassaroli and Giovanni Maria Ruggiero, “The Role of Stress in the Association between Low Self-Esteem, Perfectionism, and Worry, and Eating Disorders,” *International Journal of Eating Disorders* 37 (2005): 135-141.

are still immature and often careless about both their physical and emotional health. Youth may also conceal the effects of lack of sleep and poor diet and the voice teacher should begin training freshmen to take care of their bodies from the start. Their bodies, circumstances, and level of responsibility are changing and they may have some difficulty adjusting. Adolescents often have low self-esteem and a negative self-image. The voice teacher needs to be gentle with these fragile and volatile students. One must be aware of depression, which is more common in teenagers than many people know.<sup>58</sup>

Harvey explains that vocal health cannot be separated from overall health and that stress and fatigue are intrinsic to the singer's lifestyle, due to the demanding performance and rehearsal schedules and the fact that many singers must work two or three jobs to supplement their incomes. When considering the undergraduate singer's lifestyle, as opposed to the young professional singer at the beginning of a career, one must remember that freshmen are required to carry as many as twenty credit hours a semester and take a number of courses outside of their majors, such as Math and English.

Harvey's article points out several things that are often not taken into account such as the constantly changing lifestyle of the professional singer: the taxing schedule of the singer, the risk of obesity, the high fat diet that often result from travel and hurry, and how stress can lead to weight gain and illness. It fails, however, to address the other side of the issue. Some singers with rigorous schedules when confronted with unhealthy food choices will opt not to eat, or to eat and purge to maintain their weight. The singer who

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<sup>58</sup> See Pearl Shinn Wormhoudt, "On the Psychology of Singing and Teaching of Singing," *Journal of Research in Singing and Applied Vocal Pedagogy* 16, no. 1 (December 1992): 1-12.

is malnourished is equally at risk for developing illnesses as the singer who has a diet high in fat and low in nutrients.

According to Pipher, romantic rejection often triggers bulimic behavior in women. When seeking a reason for romantic or even more general failure, Pipher says that if the woman can find no satisfactory reason to explain said failure, she will likely blame her weight or appearance. This may reflect low self-confidence but this is also a “realistic perception.”<sup>59</sup> If women in general attribute failure to weight, and perfectionist singers experience failure more frequently than the average person, it follows that female singers would have a high level weight preoccupation. Weight preoccupation is an important predictor of BN.

Polivy exposes some other interesting facts. Bulimics, it seems, have more life stresses and difficulties, stress and negative mood, self-directed hostility,<sup>60</sup> guilt, suppressed anger, and low self-esteem<sup>61</sup> than average people. According to Polivy, “Negative affect and negative feelings about the self are channeled in [eating disorders] ED more specifically into negative feelings about the body or body dissatisfaction.”<sup>62</sup> Dissociation is also discussed:

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<sup>59</sup> Mary Pipher, *Hunger Pains: The Modern Woman's Tragic Quest for Thinness* (New York: The Random House Publishing Group, 1995): 47.

<sup>60</sup> Janet Polivy and Peter C. Herman, “Causes of Eating Disorders,” *Annual Review of Psychology* 53 (2002): 196.

<sup>61</sup> *Ibid.*, 197.

<sup>62</sup> *Ibid.*, 198.

One of the more profound psychological tactics used to escape unpleasant realities is to adopt the dynamic defense of dissociation, in which traumatic elements are split off from focal consciousness, which turns instead to something more tractable. In BN “immersion” in the binge may protect the individual from emotional stress.<sup>63</sup>

BN can develop as a means of coping with stress. People under extreme amounts of stress are therefore more susceptible to the disorder. Clifton Ware, a regular contributor to *Opera Journal*, says,

Within the vocal community singing is recognized as an extremely demanding profession – mentally, emotionally, and physically. Enveloped in hectic contemporary lifestyles, singers are frequently stressed to the point of crash-and-burn... The rationale is simple: overall well-being profoundly influences our psycho-emotional state, energy level, physical appearance, social behavior, stress-coping ability, and... vocal condition.”<sup>64</sup>

Ware also alludes to the issue of voice as self. Since the singer’s instrument is housed in their body, and in fact is their entire body, criticism can often be internalized in very unhealthy ways. This negatively affects self-esteem and self-image, putting the singer further at risk for BN.

As early as the 1950s, Louis Carp recognized the voice as self issue. A singer’s psychological and/or emotional state can negatively affect his singing. Carp observed that when a singer is under duress, his voice suffers, and that as the voice deteriorates, the singer’s self-esteem, which is bound up in his ability to sing, suffers.<sup>65</sup>

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<sup>63</sup> Ibid., 200.

<sup>64</sup> Clifton Ware, “High Notes: The Singer as Vocal Athlete,” *Opera Journal* 32, no. 2 (June 1999): 33.

<sup>65</sup> Louis Carp, “The Physiology and Psychology of the Singing Voice,” *Music Journal* 14,

*The Importance of Physical Appearance in Vocal Performance*

Blier, in his 2001 editorial style article, “The Fit Lady Sings,”<sup>66</sup> discusses the trend toward “thinness” in opera casting today. While the language is often tongue-in-cheek, the author nonetheless addresses some very real problems. As audiences become more accustomed to film and television, they are less likely to accept casting that is “unrealistic.” With the advent of supertitles in opera, audiences are also more aware of incongruous casting choices (e.g., a brown haired soprano who is continuously referred to as flaxen haired in the libretto). This trend is leading to vocal miscasting (singers who are svelte and/or appear “youthful” may be cast in romantic roles that they do not have the vocal weight or experience to carry and, likewise, singers who are deemed less attractive will be cast in the role of “the mother” or “the villain” regardless of their *Fach*). Blier also discusses how this trend is leading singers to lose weight rapidly in order to be cast and warns that this can negatively affect the voice. This trend can also have an adverse affect on staging, if singers who are deemed unattractive are cast but are then staged to camouflage their physiques rather than to serve the text. Blier claims this is trickling down into school casting and therefore “less attractive” students do not often get the opportunity to develop their stage presence. He surmises that due to this trend, we are missing out on real vocal talents.

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no.8 (October 1956): 10-11, 50-51.

<sup>66</sup> Steven Blier, “The Fit Lady Sings,” *Opera News* 66, no. 1 (June 2001): 12-17.

Costa-Giomi's 2004 study validates Blier's premise that less attractive or overweight singers do not get the opportunity to perform and grow. It would seem that attractive people receive preferential treatment from an early age. Most members of American society do not escape this attractiveness bias. Rather, the bias is internalized and the members of the society strive for a perfect appearance or "settle" for second class instruction and minimal opportunities. When one considers the high level of public scrutiny involved in the performing professions versus the less visible professions, one can see how the pressure to maintain a comely appearance would be greater for stage craft.

Costa-Giomi's research confirmed the existence of an attractiveness bias in the judgment of musical performance. Ten sixth grade pianists, five male and five female who had been taking lessons for 3 years were videotaped (audio and visual) in recital. A short segment, free of obvious errors, was selected for the experiment. Each segment was transferred to CD (audio only). The video was played with and without sound for the judges. Each rater judged the performances three ways: according to sound only, according to sound and image, and according to image only. The results show that attractive females scored higher than "unattractive" females while "unattractive" males scored higher than attractive males.

More disturbing than this, Costa-Giomi found that more attractive performers often scored higher than unattractive performers when judged by sound alone. This may prove that better instruction is available to more attractive people. She explains,

Attractiveness has been shown to influence teacher, peer, and evaluator perceptions of children, even babies, in a variety of ways. It seems that this

external quality can play an important role in children's lives, affecting their opportunities for success in school...<sup>67</sup>

And later in the article:

...Attractive violinists were rated higher than unattractive players not only when seen by the judges but also when just heard on audiotape. This suggests that attractive performers play better than their less attractive counterparts, perhaps due to the increased educational opportunities of attractive musicians-in-training.<sup>68</sup>

Davis, Claridge, and Fox, in "Not Just a Pretty Face: Physical Attractiveness and Perfectionism in the Risk for Eating Disorders,"<sup>69</sup> were looking for a link between objective physical beauty and disordered eating. Much of the literature focuses on subjective physical beauty and weight preoccupation. The authors contend that a majority of adolescent girls to be diagnosed with eating disorders are above average in objective physical beauty. They claim that "beautiful" girls receive more praise for a good physical appearance than do less attractive girls. This, in turn, affects their values and the formation of their self-identity. Children identify attainable goals and therefore "beautiful" girls identify adult female sexual attractiveness as an attainable goal. Perfectionism has been linked to ED but the authors hold that perfectionism is only a risk when coupled with anxiety and a tendency to be hypercritical.

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<sup>67</sup> Eugenia Costa-Giomi, "Attractiveness Bias in the Evaluation of Young Pianists' Performances," *Journal of Research in Music Education* 52, no. 2 (Summer 2004): 141.

<sup>68</sup> *Ibid.*, 144.

<sup>69</sup> Caroline Davis, Gordon Claridge, and John Fox, "Not Just a Pretty Face: Physical Attractiveness and Perfectionism in the Risk for Eating Disorders," *International Journal of Eating Disorders* 27 (2000): 67-73.

This article is valuable and interesting but quite brief and, at times, difficult for the lay person to understand. The information is useful for this essay because there is evidence that objective physical beauty is increasingly desirable in opera casting. Singers are also thought to exhibit perfectionism, anxiety, and extreme self-criticism. These character traits are associated with BN.

Further evidence of the “thinness” trend in opera is Deborah Voigt’s 2004 firing from Covent Garden because she could not fit in the “little black dress” the costumer and stage director had picked for her to wear as Ariadne in Richard Strauss’ *Ariadne auf Naxos*. The role of Ariadne is vocally demanding and requires a specific and rare type of soprano. Singer’s article “Turning Point” discusses Voigt’s firing and subsequent gastric bypass surgery while Sean Rocha’s “Can an Opera Singer Be Too Fat?” uses her firing as a point of departure in an article that derogates and perpetuates a stereotype from the outset. Rocha does eventually say there is no evidence that carrying extra weight helps with singing but that because singing is so bound to the emotions and the psyche, if a singer believes they will sing better if they are heavier, extra weight might help. He goes on to discuss the emphasis on voice (and not body) in the 20th century versus the more naturalistic approach in the field today. In order to attract younger audiences, directors are casting thinner singers and attempting to create a trend toward realism on the stage, comparable to that seen in the 19th century.

Kellows's article, "On the Beat,"<sup>70</sup> deals with another performer who lost work because of her size. He discusses Sharon Sweet's recent engagements and her job at Westminster Choir College. Although Sweet does not name names in the interview, she admits having lost work due to her size. She complains that we care more today about a singer's appearance than about the voice.

*Singers, Bulimia Nervosa, and Gastroesophageal Reflux Disease (GERD)*

BN, as defined by *The Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV),<sup>71</sup> involves binge eating<sup>72</sup> followed by purging, either by self-induced vomiting or use of laxatives. During the act of vomiting, the lower esophageal sphincter is forced open and the contents of the stomach are brought up through the esophagus, past the vocal tract and vocal folds, and out of the mouth. Since the contents of the stomach are highly acidic, the effects of repeated vomiting are thought to be similar to, but greater than, the effects of GERD. In GERD the lower esophageal sphincter does not close tightly and stomach acid, food, and/or liquids escape, travel up the esophagus to the vocal tract, or further. In addition, with BN, the vocal apparatus may also be damaged when

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<sup>70</sup> Brian Kellow, "On the Beat," *Opera News* 64, no. 8, (February 2000): 10.

<sup>71</sup> DSM-IV refers to the draft criteria of the manual from 1993. DSM-IV R was published in 1994 and DSM IV TR is the most recent version, published in 2004.

<sup>72</sup> "An episode of binge eating is characterized by both of the following: (1) eating, in a discrete period of time (e.g., within any two hour period), an amount of food that is definitely larger than most people would eat in a similar period of time (2) a sense of lack of control over eating during the episode (e.g., a feeling that one cannot stop eating or control what or how much one is eating)" (Zerbe, *The Body Betrayed*, 392).

objects are inserted into the mouth and down the throat to induce vomiting. A review follows of four sources that discuss the effects of BN, GERD, and poor nutrition in singers.

David, in *The New Voice Pedagogy*, devotes three paragraphs to singers and BN<sup>73</sup>. Referring to the 1990 study of ten bulimic patients by Morrison and Morris,<sup>74</sup> David lists several vocal symptoms of BN and the number of patients to present with the given symptom. Results were as follows:

...Five had hoarseness which lasted a few minutes to a few hours. Three showed a lowered speaking pitch. Two admitted to a sore mouth or throat, and two stated that they were prone to throat infections when vomiting was persistent. Laryngeal examinations were normal in two of the subjects. Four showed telangiectasia... with one of these exhibiting a tumor made up of blood vessels. One showed severe laryngeal scarring and development of a laryngeal web. Two showed polypoid changes in the mucosa. Two showed erythema in the posterior portion of the cords, and one exhibited mild vocal cord edema.<sup>75</sup>

The information in this source is very limited. It is a summary of an existing study and offers no new research. David does, however, provide a good list of some of the vocal problems associated with BN. There is no discussion of the changes in vocal sound that a teacher might associate with BN.

Rothstein's 1998 study proved that GERD was present in singers with BN. As the basis for his study, Rothstein noted that vocal fold edema and polypoid changes are

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<sup>73</sup> Marilee David, *The New Voice Pedagogy* (Lanham: The Scarecrow Press Inc., 1995): 118-119.

<sup>74</sup> Murray D. Morrison and Brian D. Morris, "Dysphonia and Bulimia: Vomiting Laryngeal Injury," *Journal of Voice* 4, no. 1 (1990): 76-80.

<sup>75</sup> David, *The New Voice Pedagogy*, 119.

associated with both GERD and BN. The subjects, 8 female singers between the ages of 24 and 34, complained of: hoarseness, sore throat, throat clearing, postnasal drip, vocal strain, decreased pitch, recurrent loss of voice, and burning throat. Four of the eight subjects complained of heartburn.<sup>76</sup> Rothstein found several laryngeal abnormalities in the subjects such as: postcricoid edema, thick mucus over larynx, vocal fold edema, posterior commissure hypertrophy, ventricular obliteration, telangiectasia, and polypoid changes.<sup>77</sup> Drug therapy was only successful in four of the eight subjects due to patient compliance. At the end of the study all eight patients were still bulimic.

This article is very brief and only compares the effects of GERD and BN. It does not describe the resultant vocal sound at all. It is, however, one of the few articles to address BN and the singing voice directly and in this sense, it is groundbreaking. Since Rothstein found evidence that GERD is a symptom of BN, articles on the effects of GERD reflux on the voice are included in the current study.

Confirming Rothstein's work, Loeding makes a brief mention of the similarity of the vocal symptoms of BN and GERD:

Reflux is often mistaken for heart attacks and bulimia. The chest pains caused by esophageal motility problems may mimic the symptoms of a heart attack. The vocal and esophageal symptoms of reflux are very similar to symptoms of bulimia.<sup>78</sup>

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<sup>76</sup> Stephen G. Rothstein, "Reflux and Vocal Disorders in Singers with Bulimia," *Journal of Voice*, 12, no. 1 (March 1998): 90.

<sup>77</sup> *Ibid.*, 90.

<sup>78</sup> Rosalie Loeding, "Vocal Survival Techniques – Gastroesophageal Reflux," <http://www.ent-consult.com/loedingger.html> (accessed September 25, 2007), 4.

Reflux is a very common cause of vocal problems in singers. Loeding, a voice specialist, claims that three quarters of her clients have mild to severe reflux and says, “Many reflux sufferers [sic] are not consciously aware of the symptoms, because chronic reflux often dulls one’s esophageal sensations and the symptoms do not appear to be associated with their vocal problems.”<sup>79</sup>

Loeding discusses the stress related to singing:

Stress is a major cause or exacerbator of reflux – personal stress, performance stress and physical stress. Fatigue, singer’s worst enemy, is another contributing factor. Also, watch your weight, because obesity is a reflux trigger. Losing weight relieves abdominal pressure.<sup>80</sup>

Interestingly, according to Loeding, the physical act of singing actually increases one’s chances of developing reflux. “When a singer “supports the sound”, the contents of the stomach are pushed up toward the diaphragm, weakening the lower esophageal sphincter.”<sup>81</sup>

The singer’s lifestyle is also a contributing factor in the progression of GERD. Many performers do not eat before they perform. Most operas, recitals, and musicals are presented at night. Singers will often eat after coming off stage, usually late at night before they go to bed. Lying down with a full stomach can contribute to the weakening of the lower esophageal sphincter. Certain foods and agents also relax the esophageal

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<sup>79</sup> Loeding, “Vocal Survival Techniques,” 4.

<sup>80</sup> Ibid., 4.

<sup>81</sup> Ibid., 1.

sphincter. These include chocolate, fatty foods, acidic foods, alcohol, tobacco, and certain medications.<sup>82</sup>

The immediately visible effects of refluxed stomach acid include red and swollen arytenoids; irritated, red, and swollen vocal folds;<sup>83</sup> and excess mucus over larynx. The long term effects of reflux may include "...swelling, vocal ulcers, contact ulcers, granulomas (a sort of tumor or nodule), and erosive esophagitis..."<sup>84</sup> Loeding also says,

Erosive esophagitis... may predispose patients to esophageal and laryngeal cancer. Untreated erosive esophagitis can result in a buildup of scar tissue which may require dilation (stretching) to allow the patient to swallow.<sup>85</sup>

Involuntary vomiting is another unpleasant symptom of acid reflux disease.

This article is very informative and does make mention of the fact that reflux and bulimia have similar symptoms and effects. One can conclude that many of the problems associated with reflux, such as loss of esophageal sensation, weakened lower esophageal sphincter, and a predisposition to esophageal and laryngeal cancer, might be present in bulimics. Loeding suggests that a "reflux regimen"<sup>86</sup> may help singers lose weight. This presumes that weight loss is either expected of, desired by, or needed by the singer experiencing the problem. Loeding does not take into account the cases of BN mistaken for GERD, or that bulimics are often above average weight, or that the desire and

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<sup>82</sup> See Loeding's "reflux regimen" in "Vocal Survival Guide" for further information.

<sup>83</sup> Usually it is only the posterior portion of the vocal folds that becomes inflamed.

<sup>84</sup> Loeding, "Vocal Survival Techniques," 2.

<sup>85</sup> Ibid., 4.

<sup>86</sup> Ibid, 3-4.

pressure to lose weight in the vocal field today might actually be a problem in and of itself.

Harvey's 1997 article discusses singing and nutrition. In the introduction to her article she says,

Laryngeal and vocal health cannot be separated from general health and longevity... Although singers are frequently referred to as vocal athletes the nutritional status of the singer has not received the attention in research or recommendations that other athletes have enjoyed.<sup>87</sup>

The stress and fatigue intrinsic to the singer's lifestyle are also discussed. Harvey mentions the singer's demanding performance and rehearsal schedules, the fact that many singers must work more than one job to supplement their incomes, the competitive nature of the profession, and the self-critical nature of singers as factors that put them at risk for illness.

In order to remain healthy, it is important, especially in periods of extreme stress, that singers take care to eat well. Harvey discusses modern medicine's focus on Louis Pasteur's germ theory: once you become ill, you treat the illness. She suggests we also adopt Claude Bernard's preventive stance on health care.<sup>88</sup> In order to get healthy and stay healthy, both approaches must be present.<sup>89</sup>

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<sup>87</sup> Pamela L. Harvey, "LaryngoSCOPE: Nutrition and the Singing Voice," *Journal of Singing* 54, no. 1 (September-October 1997): 41.

<sup>88</sup> For further information on the French scientist, Louis Pasteur (1822-1895), the germ theory and pasteurization, see [http://www.bbc.co.uk/history/historic\\_figures/pasteur\\_louis.shtml](http://www.bbc.co.uk/history/historic_figures/pasteur_louis.shtml). For further information on the French physiologist, Claude Bernard (1813-1878), and his discoveries about digestion see <http://www.britannica.com/eb/article-9078837/Claude-Bernard>.

<sup>89</sup> Harvey, "LaryngoSCOPE," 41.

Harvey points out several things that should influence the singer's diet:

Perspiring in heavy costumes can cause dehydration, performing a solo role burns more calories than singing in a chorus, travel often leads to dehydration and constipation, and being forced to eat on the run can lead to unhealthy choices. These factors should affect what and how much the singer eats and drinks. Weight management and obesity are discussed at length.

This article sheds light on numerous things often overlooked such as: the singer's shifting standard of living, a demanding schedule, the risk of developing weight problems, poor diet, and high tension and resultant risk of illness. However, it overlooks several things. When confronted with stress and a heavy work load, some singers will not eat much at all and may even take drastic measures to control their weight. AN and BN often begin as a means of managing stress, self-criticism, and lack of stability. The malnourished singer is equally at risk for developing illnesses as the singer who has a diet high in fat and low in nutrients.

Although research on singers and BN is scant, Rothstein, Morrison, and Morris felt strongly enough about the issue to address and study it. Their early studies prove that a problem does exist and that the vocal complications of BN are grave. Loeding and Harvey's work on GERD and nutrition is very informative but unfortunately both authors focus a lot of attention on weight loss. The overweight do not hold a monopoly on GERD and malnutrition. In American society today, people face tremendous pressure to be thin. It is unfortunate that in these articles, weight loss is discussed as a perk of the

“reflux regimen” and proper nutrition. Vocal and medical literature should not compound a societal ill.

## CHAPTER 3

### METHOD

The study seeks to uncover the vocal symptoms of BN. Voice teachers must be made aware of the effects of this disorder so that fewer cases will go undiagnosed. The aim of the opening chapter of this essay was to establish links between perfectionism, stress, BN, anxiety, and the singer's personality. According to ANRED, due to the specific pressures related to their chosen field, entertainers are at higher risk than the general population for developing coping mechanisms. Voice students preparing for a career in the entertainment industry are likely to be performing already. They are therefore at higher risk for developing coping mechanisms than are students who are not regularly in front of audiences. Because disordered eating is often hidden by the sufferer, the known occurrence rate of the disorder may not reflect the true extent of the problem. Voice students with an ED may be even more prone to secrecy because they are engaging in a behavior that directly affects their vocal mechanism and would likely affect their grades negatively. BN may masquerade as GERD, but as Morrison and Morris point out, if the otorhinolaryngologist notices thinned tooth enamel combined with GERD symptoms, the culprit is likely to be BN. A more detailed diagnostic model would be valuable to all voice specialists.

Using methods outlined by Barabara W. Sommer and Mary Kay Quinlan In *The Oral History Manual*,<sup>90</sup> the current author will begin to create a comprehensive list of the vocal symptoms of BN.

### *Description of Participants*

Three prominent voice disorder specialists were interviewed to assess the vocal damages they believe are related to bulimic behavior. All specialists had at least five years professional experience working with singers aged 17 to 30.

An otorhinolaryngologist who conducted BN research was consulted by the current author. In voice medicine, vocal faults are diagnosed according to the appearance of the vocal folds in combination with the sound of the voice and medical history. Based on video images of the vocal folds taken through stroboscopy, doctors can accurately assess injuries. They are then able to diagnose and prescribe therapy, medication, or surgery. Although doctors can probably hear vocal damage in a voice, they are unlikely to speak with authority before viewing video of the folds and taking a complete medical history. Once the assessment has been made, the doctor can confirm the hypothesis made based on sound.

It is difficult for a bulimic to hide his/her condition from a health professional in the possession of video images. Although other tests may be necessary to prove the patient has BN, the presence of certain vocal symptoms may validate a voice teacher's

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<sup>90</sup> Barbara W. Sommer and Mary Kay Quinlan, *The Oral History Manual* (Walnut Creek: Rowman & Littlefield Publishers, Inc., 2002).

suspicious. Once a singer cares enough about his or her vocal health to consult a doctor, who is sworn to confidentiality and who has the tools to diagnose BN correctly, the vocalist may be more likely to admit to the behavior.

A speech pathologist, who works in an otorhinolaryngology department but mainly with the speaking voice, was consulted as well. Usually, a speech therapist does not stroboscope, but like a voice teacher, works with aural clues.<sup>91</sup> Different semantics are used during speech therapy and singing lessons. Clients are also asked to use their voices differently in these sessions and new problems or vocal faults may be discovered because of this.

The final voice expert consulted was a Singing Health Specialist. 'Singing Health Specialist' is a name given to voice teachers and professional singers who work with medical doctors and speech pathologists to diagnose and treat voice disorders. These Singing Health Specialists also have anatomical and physiological training and study. They see singers in both the voice studio and the clinic and are often able to point to problems based on very subtle oral clues.

### *Data Collected*

The data collected consists of audio recordings of interviews conducted over the phone and recorded via an Olympus digital voice recorder (VN - 6200PC) and a special telephone microphone. Interviews were conducted between the dates of October 29,

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<sup>91</sup> The speech-language pathologist consulted for this essay does, in fact, work with video stroboscopy.

2010 and January 4, 2011. Transcriptions of the live interviews may be found in Appendix E, page 90.

Open-ended interviews were conducted based on the research questions listed in Chapter 1, page 16.

### *Procedures*

Via email, the three participants, were informed of the study and asked if they were interested in participating. They were asked at the same time to choose between an in-person interview and a phone interview. The interview was conducted at a time convenient to the subject.

The current author designed an open-ended interview, similar to the one described by Stephen F. Zdzinski in his article, *Joseph A. Labuta and his Life in Music Education: An Oral History*.<sup>92</sup> Although, according to Zdzinski, this method is often used to collect biographical information based on the memories of the interviewee,<sup>93</sup> the oral history method was adapted and applied to this project. The open-ended format was chosen because the author wished to encourage honesty, free exchange, and thorough discussion. Interview questions were based on the initial interview questions (found in Appendix B, page 84) and research questions (listed in Chapter 1, page 16) created specifically for this study. Significant deviation occurred due to the open-ended format of the interviews.

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<sup>92</sup> Stephen F. Zdzinski, "Joseph A. Labuta and his Life in Music Education: An Oral History," *Journal of Historical Research in Music Education*, 29, no. 2 (April, 2008): 108-128.

<sup>93</sup> *Ibid.*, 3.

The particular expertise of the individual participants as well as their unique relationships with voice students also led the discussions in different directions.

### *Analysis*

The results of the interviews have been compared, synthesized, and presented in narrative form. Based on observation and opinion, the specialists were asked about the visible damage to the vocal apparatus and changes of the singing voice that might result from repeated vomiting and/or use of laxatives. Other physical, psychological, and emotional problems associated with bulimia that might affect singing or become problematic within the context of a private voice studio were addressed.

## CHAPTER 4

### STUDY RESULTS

Based on the author's interviews of three prominent voice specialists, a narrative discussion of the interview transcripts is given in this chapter. The chapter is divided into the following sub-sections: *Reaffirming a Need for the Study* and *Visible and Audible Symptoms and Effects of Bulimia Nervosa*. *Ideas for Further Research and Suggestions for Voice Teachers* are addressed in the conclusion (Chapter 5). Transcripts of the interviews appear in Appendix E, page 90.

#### *Reaffirming a Need for the Study*

The first purpose of this essay, as stated in the introductory chapter, is to establish a need for further study of the effects of BN on the vocal apparatus by showing that college age singers are at risk for the development of ED. This was done by an examination of existing literature that described risk factors for the development of BN; common character traits of singers and bulimics; trends in opera, musical-theater and film casting; and the scant literature directly related to vomiting and laryngeal injury - research that clearly shows a problem exists. Yet another important point raised in the opening two chapters of this essay was that certain people are put at higher risk for developing ED (and other coping mechanisms) due to the unique demands of their professions.

The author's interview with Singing Health Specialist Dr. Karen Peeler, voice teacher, head of vocal pedagogy, and vocal care and health with Ohio State University's

(OSU) groundbreaking program in Singing Health provided ample support for this study as well. Dr. Peeler states in the opening of the interview that in the last fifteen years, largely in response to the work of Dr. Robert Sataloff, voice teachers and voice doctors are collaborating increasingly. Voice teachers have shown greater interest in delving into the areas of pedagogy and research, as well as into anatomy, physiology, and medicine. Two interdisciplinary programs have cropped up recently that provide advanced students of three streams of study (singing, speech-language pathology, and otorhinolaryngology) with the opportunity to work together and learn from one another. These are: Ingo Titze's Summer Vocology<sup>94</sup> program at the National Center for Voice and Speech (NCVS) at The University of Utah and Peeler's own Singing Health Specialization program at OSU.<sup>95</sup> It is her belief that in order for singers to achieve independence and vocal longevity they need to be more self aware than they have been in the past. She says:

Singers have to understand how to care for their voice, how it is sustained, how they got where they're going, and how to get out of trouble if they get in trouble, and how to look for trouble and we haven't taught that well. Even yet, we're not teaching it well enough...You have to learn how to take care of your instrument, how it's built. I realize that somebody said you don't have to know how a golf club's made to be a good golfer but, you know, most good golfers do know

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<sup>94</sup> A search on the etymology of the word 'vocology' revealed that the term may have been created by either Dr. Ingo Titze, who defines it as "the science and practice of voice habilitation, with a strong emphasis on habilitation," or by Dr. George Gates, professor of otolaryngology, at the University of Washington, although Titze is often called "the father of vocology." The term seems to have first appeared in 1996. (<http://www.finance.reachinformation.com/Vocology.aspx>, accessed January 25<sup>th</sup>, 2011).

<sup>95</sup> Dr. Peeler describes OSU's program as having a practical focus and NCVS's program as more research based (Karen Peeler, interview by the author, telephone, digital recording (November 30, 2010): 104).

what's in a good club, the balance, and the weight and the metals that are in it. And, no it may not determine their success as a golfer but most [good golfers] just want to know that. We just cannot have these stupid singers anymore who just think that their voice will always be there because honest to God, it will not, it will not.<sup>96</sup>

Later, Dr. Peeler adds, “At some point, you become ultimately responsible for your own success and your own sound.”<sup>97</sup> If it is the way of the future to understand the instrument from a physical standpoint, then it is also necessary to study voice disorders. Most vocal pedagogues would agree with this statement and in fact, UM’s vocal pedagogy program offers a course devoted entirely to voice disorders (MVP 636, “Voice Disorders” currently taught by voice teacher and author, Rachel Lebon).<sup>98</sup> While many vocal problems arise due to vocal abuse and misuse, we must acknowledge that some voice disorders occur as a result of substance abuse, EDs, and various other coping mechanisms. It is a sad fact that co-morbidity occurs often with ED.<sup>99</sup> Therefore when dealing with a student troubled by ED, a teacher may actually have several different issues to combat.

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<sup>96</sup>Peeler, interview by the author, 106-107.

<sup>97</sup> Ibid., 107.

<sup>98</sup>“My UM, Course Offerings,” <https://myum.miami.edu/General/courses/coursesMainNew.asp>, (accessed March 6, 2011.)

<sup>99</sup>See Kathryn J. Zerbe, *The Body Betrayed*, (Carlsbad: Gürze Books, 1993): Chapter 2, pages 27-50, “Comorbidity : The Dilemma of Dual Diagnoses.”

Speech pathologist, Dr. Donna Lundy, of the University of Miami, says in the opening portion of her interview, “Yes, we’ve seen plenty of cases of eating disorders..”<sup>100</sup> Dr. Peeler, as well, reveals:

I’ve had troubles that I didn’t know about. I wondered what was wrong with the voices. I’m thinking of one person, in particular, and only many years after that girl had been a student of mine did she confess to me that she was heavily on drugs during the time that she had all her vocal problems and... I was thinking I was a lousy teacher that I simply...couldn’t find the answer to her problems and there wasn’t any answer I could have given with that kind of carrying on.<sup>101</sup>

Dr. Morrison’s 1990 study with Brian D. Morris, “Dysphonia and Bulimia: Vomiting and Laryngeal Injury,”<sup>102</sup> as the first to address BN and the voice, speaks for itself. He estimates the occurrence of ED in the general population to be at least five percent.<sup>103</sup> This is consistent with NEDA’s current statistics on anorexia and bulimia, however it is inconsistent with their findings when considering the millions more who suffer from CO and other lesser known Eating Disorders.<sup>104</sup>

Dr. Peeler’s interview revealed another compelling reason why it is important to look more closely at this issue. There is a lack of awareness about ED within the voice studio. She says:

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<sup>100</sup> Donna Lundy, interview by the author, telephone, digital recording, (October 29, 2010): 92.

<sup>101</sup> Peeler, interview by the author, 102-103.

<sup>102</sup> *Journal of Voice* 4, no. 1 (1990): 76-80.

<sup>103</sup> See Murray Morrison, interview by the author, telephone, digital recording, (January 4, 2011): 115.

<sup>104</sup> For further information visit the National Eating Disorders website at <http://www.nationaleatingdisorders.org/information-resources/general-information.php>

I would be interested to find out what you think the aural and visual cues are for this. I have simply not been aware [of them]. I've had students with weight problems, of course, and that seems to be more prevalent in my business, at least as I've found it, than people who are bulimic. I haven't had any occurrences of really thin, unhealthy looking students. But I don't know that bulimic people are always thin.<sup>105</sup>

It may be that Dr. Peeler's students have escaped the disorder; however, Lundy and Morrison are both seeing singers who have succumbed to it. This implies that Dr. Peeler was right to say that she has been *unaware* of it and not that her students simply do not suffer from it. One can infer that students are divulging more information about their vocal problems to their doctors than they are to their voice teachers. Morrison says,

When I say most [singers] may not want to [tell about their condition], it's not that they're being dishonest but they don't want to spread information about their health and particularly their psychological well-being out to the public because that's their job, right? If you've got a director/producer of some show, and they say, 'oh yeah, no, they're a little, that person's a little bit screwed up, you know, they may be prone to having problems, so stay away', so they're obviously not going to want to have the whole world know that they're suffering from bulimia or some eating disorder... I think it makes sense to keep a lid on it but they'll often talk to their physician about it, particularly if asked.<sup>106</sup>

Peeler also says that in the one hour per week that students see their voice teachers, they may not want or need to discuss their medical or psychological problems in order to get the most benefit from their lessons:

You need an environment in which you can leave your baggage at the door and be productive as a singer. And so, I've heard very fine, very famous teachers criticized because they do so much psychological counseling. And it's not their

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<sup>105</sup> Peeler, interview by the author, 105.

<sup>106</sup> Morrison, interview by the author, 116, 117.

job. You've got to be the person when they come into your studio, it's the place they most want to be that week. It's the one hour that is theirs and where they have real joy in learning. And if they've got troubles they'll tell you but... They don't need me to know about [every detail]. They need me to see them as a beautiful young singer with great talent and potential. And my job is to bring that out in them.<sup>107</sup>

Dr. Peeler's statement, "I don't know that bulimic people are always thin,"<sup>108</sup> is also telling. Contrary to popular belief, Bulimia is not a disease that creates inordinate thinness. According to the National Alliance on Mental Illness, "Bulimia nervosa is an invisible eating disorder, because patients are of normal weight or overweight."<sup>109</sup> But Dr. Peeler also discusses at length the problem of obesity. Obesity is often caused by CO, an ED closely related to BN.<sup>110</sup> The general population, voice teachers included, is likely under informed about the effects of these diseases.

Dr. Peeler emphasizes the negative effects of stress and over-loaded schedules on college aged singers. Stress is a factor that directly affects health, both physical and mental. Anxiety and depression were also mentioned by Peeler and Lundy as being present in patients with BN.<sup>111</sup> Confirming the author's finding that singers, as a group, are in greater danger of becoming bulimic or anorexic, Lundy says:

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<sup>107</sup> Peeler, interview by the author, 110.

<sup>108</sup> Ibid., 105.

<sup>109</sup>National Alliance on Mental Illness, "Bulimia Nervosa," [http://www.nami.org/Template.cfm?Section=By\\_Illness&template=/ContentManagement/ContentDisplay.cfm&ContentID=102972](http://www.nami.org/Template.cfm?Section=By_Illness&template=/ContentManagement/ContentDisplay.cfm&ContentID=102972) (accessed January 31, 2011).

<sup>110</sup>CO is similar to the first phase of BN, bingeing.

<sup>111</sup> For further information on stress and anxiety in college students see, Ranjita Misra and Michelle McKean, "Academic Stress and its Relation to Their Anxiety, Time Management, and Leisure

Performing artists having increased risk of developing eating disorders? Yeah, I mean it has to do with image. It has to do with sense of self and security. And you know, the performer is on stage so they're always worried about how they look and appear to others and you know sometimes people go to great extents to do what they think is going to improve their stance.<sup>112</sup>

Lundy also confirms that ED is often seen in combination with other coping mechanisms such as substance abuse.<sup>113</sup>

Dr. Peeler reports having had a talk with one of her students, who she estimates was sixty to one-hundred pounds overweight. She says, "I just had to say, kindly, there's a lot more to being a singer than a wonderful voice. You have to start there, but it's the package."<sup>114</sup> Unfortunately, as Dr. Morrison points out, the Canadian and American population is becoming more overweight<sup>115</sup> and health professionals are concerned. He says,

A lot of the people we see have a lot of general medical conditions that are based on inadequate exercise, the obesity, and some of the problems I see with anxiety, depression, general muscle tension issues often get vastly better in people who can get into a regular exercise program.<sup>116</sup>

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Satisfaction," *American Journal of Health Studies* (2000): 41-51; Jennifer Crocker and Katherine M. Knight, "Contingencies of Self-Worth," *Current Directions in Psychological Science* 14, no.4 (2005): 200-203; And B. Andrews and J.M. Wilding, "The Relation of Depression and Anxiety to Life-Stress and Achievement in Students," *British Journal of Psychology* 95 (November, 2004): 509-521.

<sup>112</sup> Lundy, interview by the author, 95.

<sup>113</sup> Ibid., 95.

<sup>114</sup> Peeler, interview by the author, 106.

<sup>115</sup> Morrison, interview by the author, 124.

<sup>116</sup> Ibid., 124.

Sadly, North Americans seem to be caught in a vicious circle as Morrison also points out that obesity is linked to anxiety and depression. In his opinion, prescription drugs used to combat these conditions, do not work as well as, “The drugs that your body makes and that your brain makes in response to exercise.”<sup>117</sup> As a society so concerned with image and appearance, being overweight certainly promotes upset; however, when you consider that anxiety is also an intrinsic physical by-product of the condition, we see the problem compounded. For the singer, who spends long hours rehearsing, with little time to think about diet and exercise but with even greater pressure to look good, the problem grows. As Morrison points out later, “I haven’t seen too many three-hundred pound Carmens around for a while.”<sup>118</sup> In a culture focused on the quick fix and “The American Dream” of success at all costs, ED can seem like a solution and an escape at the same time.

*Visible and Audible Symptoms and Effects of Bulimia Nervosa.*

The second purpose of the essay is to provide a list, in very simple terms, of vocal symptoms associated with BN. This portion of the essay is centered on primary research and relies heavily on the interview results of speech-language pathologist Dr. Donna Lundy and otolaryngologist, Dr. Murray Morrison, who meet with voice students exclusively as medical practitioners and not as voice teachers. They accept without question the existence of BN among singers and are readily able to describe the symptoms they have observed in their practices. From their interview material, the

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<sup>117</sup> Ibid., 124.

<sup>118</sup> Ibid., 125.

author was able to compile a list of physical symptoms. The author felt it was important to include in the list certain physical attributes, physical complaints, and personality traits, that when coupled with vocal symptoms, can aid in diagnosis. As a question for further research and in order to add to the list of symptoms, it would be interesting to speak with ED counselors and specialists to gain a more in depth description of the physical behaviors and psychological distresses of people with BN.<sup>119</sup> This information could later be used to expand the symptom list and diagnostic material.

Dr. Morrison estimates that ninety percent of his patients have problems related to gastroesophageal reflux and surmises that this is a reflection of the current lifestyle and diet in North America, a region where obesity is an ever increasing problem. He says:

Bulimia is kind of like a self-induced reflux or a voluntary reflux. And in many respects, the kind of laryngeal medical problems that I see in people with significant gastroesophageal reflux or laryngeal-pharyngeal reflux are the same sort of things that we see in people with bulimia.<sup>120</sup>

Dr. Lundy adds that the larynx of a person with BN might look like that of someone with, “Very severe reflux signs but out of proportion to just general reflux.”<sup>121</sup> Reflux symptoms are generally responsible for causing breathiness, hoarseness, and a raspy vocal quality.

In addition to exaggerated reflux symptoms, singers with bulimia might develop contact injuries on the tongue and in the mouth from eliciting the gag reflex during

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<sup>119</sup> See *Ideas for Further Research*, 66.

<sup>120</sup> Morrison, interview by the author, 116.

<sup>121</sup> Lundy, interview by the author, 92.

vomiting. Dr. Morrison also mentions that when coughing, spasms, and retching as a result of vomiting occur in combination with the high exposure to acid, the larynx can be seriously injured. The resultant scarring can lead to stiffness in one or both vocal folds causing asymmetry, and this may lead to control problems and difficulty with register transitions. All of these things may lead to diminished range, and edema particularly, can lead to a loss of low notes.

Dr. Morrison mentions parotid swelling. This is an enlargement of the salivary glands in front of the ears. When the glands swell, this leads to “chipmunk cheeks.” What actually occurs is the nutrients in food, which normally begin breaking down in the saliva, are not being swallowed and making their way through the digestive tract. They instead are partially absorbed through the salivary glands as part of the body’s survival mechanism. In effect, digestion is occurring in the cheeks. Both bulimics and anorexics deprive their bodies of needed calories. As a result, their metabolic rates slow and their bodies go into starvation mode, in which they hold onto every calorie that is ingested. Because the parotid glands of the bulimic have taken over some of the function of digestion, bulimics absorb more calories than anorexics, and tend to have higher body weights.<sup>122</sup> Some blockage of the parotid glands may occur as well, which would exacerbate any puffiness in the cheeks.<sup>123</sup>

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<sup>122</sup> Ira M. Sacker and Marc A. Zimmer, *Dying to be Thin*, (New York: Warner Books, 1987): 31.

<sup>123</sup> Zerbe, *Body Betrayed*, 263.

In his interview, Dr. Morrison briefly discusses muscle tension dysphonia (MTD) and dehydration resulting from BN. Although he did not mention any symptoms specifically associated with these voice disorders, he suggested doing a survey of their effects. Lundy also mentioned dehydration as a symptom of BN.

MTD is a result of misuse of the muscles of the larynx and neck. Christopher Y. Chang of the Fauquier Ear, Nose, and Throat Consultants of Virginia gives the following definition of the disorder:

Muscle tension dysphonia (MTD) is a loose term that describes hoarseness resulting from inappropriate muscle contractions of the voicebox and/or neck while talking.<sup>124</sup> Another key feature of MTD is that on examination, the voicebox anatomy is essentially normal, but functionally pathologic. Such a voicebox examination is performed by endoscopy. There are several different forms of muscle tension dysphonia which need to be clarified.<sup>125</sup>

Chang lists the various types of MTD as Compensatory, Supraglottic, Glottic, and Spasmodic Dysphonia, which he says is not MTD but often confused with it. The type of MTD related to BN would be compensatory in nature. According to The Voice and Swallowing Institute of The New York Eye and Ear Infirmary:

...In an attempt to compensate for the vocal changes, an individual alters muscle activation patterns, possibly by using excessive muscle tension or recruiting the use of muscle not ordinarily active. This process is referred to as "maladaptive compensatory behaviors," and they can become a habit over time. In either

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<sup>124</sup> In the case of a bulimic patient, MTD would probably develop in response to vocal changes brought on by the retching, coughing and vomiting associated with BN, and not exclusively due to problems with their manner of speaking.

<sup>125</sup> "Muscle Tension Dysphonia (Muscular Tension Dysphonia)" (Last modified 10/30/2009,) <http://www.fauquierent.net/mtd.htm> (accessed January 26, 2011).

primary or secondary MTD, the habitual use of abnormal patterns of muscle activation during phonation can be difficult to unlock without treatment.<sup>126</sup>

Some symptoms associated with all types of MTD are (1) harsh quality; (2) shrill quality with sporadic voice loss; (3) cracking;<sup>127</sup> (4) breathiness; and (5) loss of fine control at medium volume level.<sup>128</sup> Voice loss resultant from MTD can often be recovered with vocal rest; however, the long term recommended treatment is voice therapy to learn to use the vocal muscles properly and thus avoid more serious damage.

Dr. Morrison and Dr. Lundy also mention dehydration as an important symptom of BN. The vocal result being a loss of, “Elasticity of the vocal fold mucosa and the ease of vibration...”<sup>129</sup> This loss of ease can in turn lead to muscle misuse.

The aim of the research in this portion of the essay is to serve as an aid to voice teachers by providing clear and simple information about the effects of BN on the voice. The following is a concise list of all symptoms easily identifiable by sight or sound associated with BN that were discussed in the expert interviews. It must be understood that not all symptoms will be present in every singer suffering from BN. Also note that the terms in the section of the list describing vocal qualities are words that were used by

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<sup>126</sup> “Diseases of the Larynx that May Cause a Voice Problem,” <http://www.nyee.edu/cfv-larynx-disorders.html#mtd> (accessed February 1, 2011).

<sup>127</sup> Neil N. Chheda and John Werning, “Functional Voice Disorders” (Last updated May 11, 2009,) <http://emedicine.medscape.com/article/865191-overview> (accessed January 26, 2011).

<sup>128</sup> Jonathan Livesey, “Muscle Tension Dysphonia,” *Voice – The Journal of the Australian Voice Association* (1997,) <http://www.voiceconnection.com.au/pdf/muscleletension.pdf> (accessed February 2, 2011).

<sup>129</sup> Morrison, Interview by the author, page 126. For additional information on this topic see Jack Jiang, Jennie Ng, and David Hanson, “The Effects of Rehydration on Phonation in Excised Canine Larynges,” *Journal of Voice*, 13:1, 51-59.

patients or students attempting to describe their own vocal issues. Different singers might use different semantics to describe their particular vocal qualities. In addition, note that the sample recordings of people with MTD indicated cracking, a symptom the experts did not mention in their interviews.

*List of Symptoms Associated with BN, Easily Identifiable by Sight or Sound*

DESCRIBING VOCAL QUALITY

1. Hoarseness
2. Raspy quality
3. Harshness
4. Breathiness
5. Squeakiness
6. Croakiness

DESCRIBING VOCAL ABILITY

7. Loss of range
8. Loss of low notes with edema
9. Muscle tension
10. Difficulty sustaining the voice in *passaggio*
11. Difficulty with register transitions
12. Poor vocal control
13. Difficulty maintaining a consistent vocal quality
14. Vocal fatigue

15. Lack of endurance

16. Poor breath support

#### DESCRIBING PHYSICAL FEELINGS

17. Cough in the morning

18. Heartburn

19. Sore mouth

20. Sore throat

21. Sore tongue

#### PHYSICAL APPEARANCE

22. "Chipmunk cheeks"

23. Grey or dull teeth

24. Thinness or rapid weight loss\*\* (however many bulimics are above average weight)

#### DESCRIBING PSYCHOLOGICAL STATE

25. Anxiety

26. Depression

27. Perfectionism

## CHAPTER 5

### CONCLUSION

The results of this study seem to confirm what was put forth in Chapters 1 and 2 of this paper. College aged students, females especially, but increasingly males as well, are highly vulnerable to ED. Two psychological factors and character traits that recur in the literature and interviews as spurring the development of ED are anxiety and perfectionism. The literature review indicates that singers, as a group, are prone to perfectionism. That college music students are stressed and anxious was confirmed by Dr. Peeler in her interview. Peeler says that due to intense competition and arduous schedules, students often arrive at their lessons unable to sing:

And kids are so stressed today and in schools their schedules are enough to kill a horse and they want to do well and they're just meeting impossible deadlines. And it's a rest issue too. Everybody just sounded terrible before they went on break...And I thought, "Oh my gosh, these people are going to sound awful on their juries," and then this week I find, "My gosh, they're pulling it together. It sounds great." It's mainly they needed that break. They needed that rest. They went home or they went somewhere and got lots of sleep and somebody was good to them and got rid of the tension for a few days and they just sound great. I don't know what we're trying to do to people but I tell them in their sophomore year, if you survive sophomore year, you can survive anything up here.<sup>130</sup>

These factors, combined with our society's fixation on maintaining thinness and a youthful appearance, while we simultaneously become increasingly obese due to CO is a recipe for the development of other coping mechanisms. Some who develop BN are focused on their weight but this is usually only the first layer of the disorder. BN can develop as a reaction to CO (as a means to control weight or simply as an added measure

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<sup>130</sup> Karen Peeler, interview by the author, telephone, digital recording, (November 30, 2010): 104.

to soothe anxiety) or as a response to anorexic starvation (after intense dieting a hungry person might binge on food and then regret “falling off the wagon”<sup>131</sup>) but BN can develop on its own. All of these EDs, however, occur in response to emotional and psychological troubles.

It should seem obvious that forcibly regurgitating food is harmful to the vocal apparatus. Sadly, BN is very similar to substance addiction,<sup>132</sup> which Web MD defines as “Habitual psychological or physiologic dependence on a substance or practice that is beyond voluntary control.”<sup>133</sup> Web MD also says of alcohol dependence, “When you abuse alcohol, you continue to drink even though you know your drinking is causing problems.”<sup>134</sup> Another definition of addiction is, “The state of being enslaved to a habit or practice or to something that is psychologically or physically habit forming, as narcotics, to such an extent that its cessation causes severe trauma.”<sup>135</sup> This means that despite having intuitive knowledge that a habit or addiction (in this case bulimic behavior) is harmful to that which is most precious (to the singer, his or her voice) the

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<sup>131</sup> “Falling off the wagon” is an expression in common usage referring to a recovering addict’s relapse.

<sup>132</sup> See Mary Pipher, *Hunger Pains: The Modern Woman’s Tragic Quest for Thinness*, (New York: The Random House Publishing Group, 1995), Chapter 7, “Bulimia – The Food Addiction” pages 46-56 and Ira M. Sacker and Marc A. Zimmer. *Dying to be Thin*, (New York: Warner Books, 1987): 30

<sup>133</sup> Creator unknown, *WebMD*, “Addiction,” [www.dictionary.webmd.com/terms/addiction](http://www.dictionary.webmd.com/terms/addiction) (accessed January 25, 2011).

<sup>134</sup> Creator unknown, *WebMD*, “Alcohol Abuse and Dependence” <http://www.webmd.com/mental-health/alcohol-abuse/alcohol-abuse-and-dependence-topic-overview> (accessed January 5<sup>th</sup>, 2011).

<sup>135</sup> Creator unknown, *Dictionary.com*, “Addiction,” <http://dictionary.reference.com/browse/addiction> (accessed January 25, 2011).

person is unable to control the behavior. When one considers the social and professional disgrace, real or perceived, that often accompanies addiction, ED, and emotional, psychological, or mental illness, it is easy to understand why a singer might not discuss this issue. If help were to be sought, a qualified doctor could explain and demonstrate just how damaging the effects of BN can be to the voice. If the singer truly cares about his or her career and future, this might be enough to help him or her “hit bottom”<sup>136</sup> and curb the behavior. However, long-term counseling and the advice of a nutritionist are advised, once the decision to change has been made.

The severity of the symptoms associated with BN cannot be stressed enough.

Pipher says,

Many serious health problems are associated with bulimia. Dehydration and the consequent electrolytic imbalance can require hospitalization and the use of intravenous fluids. Chronic gagging leads to throat and esophagus injuries. Repeated gorging and vomiting or the chronic use of laxatives causes stomach, bowel, and gastrointestinal tract disorders. Dental problems, such as the decalcification of the teeth are frequent. Emetics, which are medications used to induce vomiting, are especially dangerous. Ipecac, the most common emetic, is a poison that has led to death by congestive heart failure.<sup>137</sup>

In *Dying to Be Thin*, Sacker and Zimmer, also mention that bingeing and purging independently of laxatives can cause serious heart arrhythmia and even lead to cardiac arrest.<sup>138</sup> In the same chapter, Sacker and Zimmer explain that the esophagus, when

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<sup>136</sup> “Hitting bottom” is a figure of speech that means to reach the ultimate low point in one’s life. It is commonly believed to be the low point an addict must reach in order to be shocked into changing.

<sup>137</sup> Pipher, *Hunger Pains*, p 49-50.

<sup>138</sup> Ira Sacker and Marc A. Zimmer. *Dying to be Thin*, (New York: Warner Books, 1987) 40.

repeatedly injured, can rupture.<sup>139</sup> The risk of developing esophageal cancer also increases.<sup>140</sup>

Any person with this disease is at serious risk. Singers with this disorder are destroying not only their health, but very rapidly causing the deterioration of their instrument. Much as current Public Service Announcement campaigns are appealing to the vanity of the young smoker (who they assume is not swayed by the countless health warnings issued on their packages of cigarettes) by showing the wrinkles and blackened teeth that will eventually come from smoking,<sup>141</sup> it might be very worthwhile to appeal to the singer's desire to preserve and improve his/her instrument. None of the vocal effects of BN are desirable. Singers who vomit repeatedly will presumably exhibit hoarseness or have a breathy quality on the best of days. On worse days, they will be vocally and physically weak, have poor breath control, and muscle tension. As conditions deteriorate, the singer may develop extensive scarring on the vocal cords, asymmetry of the vocal folds leading to loss of vocal control, and inability to navigate the *passaggio*. Every episode of purging negates the vocal progress made through countless hours of diligent practice.

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<sup>139</sup> Ibid., 36.

<sup>140</sup> Eric T Shinohara, Samuel Swisher-McClure, Michael Husson, Weijing Sun, and James M Metz, "Esophageal cancer in a young woman with bulimia nervosa: a case report," *J Med Case Reports* 1, (2007):160. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2213673/> (accessed January 30<sup>th</sup>, 2011) .

<sup>141</sup> "Would you still smoke?" Available on youtube.com. <http://www.youtube.com/watch?v=Gib8zOmzzd8> (accessed January 20<sup>th</sup>, 2011).

*Ideas for Further Research*

1. Statistical analysis across several different fields of college voice study including, but not limited to: Music-Theater Performance, Opera Performance, Jazz Performance, and Music Education to obtain an overall percentage of bulimic singers and a comparison of percentages between the different departments.
2. Interview ED specialists to gain a more in depth psychological and behavioral profile of the bulimic performer.
3. Follow a group of bulimic singers and a control group of non-bulimic singers via regular stroboscopes, vocal analyses by voice teachers, and interviews, over a four year period (the length of a bachelor's degree program) to document the progress or deterioration of the voice.
4. Compare and contrast stroboscopes of patients' suffering from GERD with stroboscopes of patients suffering from BN.
5. Find out what the percentage of co-morbidity of BN and other coping mechanisms is among singers.

*Suggestions for Voice Teachers*

Voice teachers are not psychologists, nor, at this point in time, is extensive study of psychology required of vocal pedagogy students.<sup>142</sup> While certain vulnerability is required of the singing actor, and a certain innate ability is desired in the singing teacher to bring out this truth in the student, it does not behoove the voice teacher to fix deep psychological issues. What the voice teacher must do is help the student through vocal issues and, if the problem has grown too big for the studio, advise the student to see a doctor. A voice teacher would never try to treat an upper respiratory infection requiring antibiotics. Likewise, a voice teacher cannot treat an ED requiring therapy and sometimes medication, to treat the underlying cause. Voice teachers can listen, both to the singing voice and to the words of the student, and offer guidance. This is probably one of the most important jobs of the Singing Health Specialist: to listen. If a good rapport has developed between a voice teacher and a student, that teacher can truly change the student's life. Teachers must understand that EDs are very serious illnesses that are long- term and extremely difficult to overcome. Because mental illness is often far less visible than physical illness, it can be mistaken for something far less serious and short term. Do not be fooled. Depression, for example, is not just sadness that is there one day and gone the next. If a student's vocal symptoms are similar to those caused by GERD, persist for a very long time, seem to be more severe than the average case of GERD, or do not respond to reflux medications, the student may very well be suffering

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<sup>142</sup> An examination of the Vocal Pedagogy programs at The University of Miami, Shenandoah University, Boston Conservatory, NYU Steinhardt, and Belmont University revealed no psychology courses in the curricula.

from BN. Due to university regulation, a teacher may not be able to come right out and ask if the student has an ED or an addiction. However, if the student has brought up the issue, a teacher may ask if the student has taken any unusual measures to lose weight. The teacher can also suggest speaking with a counselor who specializes in treating performing artists. The teacher can inform the student that counseling is something all performers might want to consider, given the high-stress environment in which they work. By emphasizing the fact that the referral is not a reflection on the given student, but merely something that is advisable for anyone who is under pressure, the teacher can help the student feel less afraid to step through the doors of the counseling center.

Vocally, the teacher should proceed as they would with a student suffering from extremely severe GERD. If the student is well hydrated and has managed to retain some nourishment, they might be able to sing through the symptoms. But is this advisable? A visit to the otorhinolaryngologist might reveal broken blood vessels on the cords, contact injuries, and potential hemorrhages. Usually, when the range begins to diminish, the singer will be quite willing to see a doctor. The doctor should then be the one to determine whether vocal rest is required.

### *Final Thoughts*

In conclusion, the author must once again stress the importance of getting help when dealing with ED. Overcoming something as complex as BN will often require the guidance of a nutritionist, a general practitioner, and a qualified therapist. Due to comorbidity, it may be necessary to work with a psychiatrist as well. An

otorhinolaryngologist, gastroenterologist, and cardiologist may be important to recovery because of disorders that develop as a result of ED. In addition, support groups exist to introduce bulimics to other people who share their goals and fears. This disease is difficult to understand and difficult to treat. Families and friends of people with ED often need counseling and support as well. In a college environment, one might not need look further than the school's counseling center. The author and specialists interviewed for this paper agree that it might be of some use to have an ED expert address all incoming freshmen about the perils of bulimia and anorexia. Some counselors specialize in treating performers and are prepared to deal with the unique demands and medical problems associated with the profession.

If you or someone you know might have a problem with ED, please visit <http://www.nationaleatingdisorders.org/> (the NEDA website) for information about getting help.

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## APPENDIX A

### EXCERPT FROM *DSM-IV-TR*

The following is a large excerpt from *DSM-IV-TR Mental Disorders: Diagnosis, Etiology, and Treatment* (First, Michael B. and Allan Tasman. Hoboken: NJ: J. Wiley, c2004, 589-595.) It gives detailed information about BN as well as a short list of diagnostic criteria for the disorder. The portion on “Eating Disorder, Not Otherwise Specified,” is also included because it covers sub-threshold bulimia.

### **307.51 Bulimia Nervosa**

#### Diagnostic Features

The essential features of Bulimia Nervosa are binge eating and inappropriate compensatory methods to prevent weight gain. In addition, the self-evaluation of individuals with Bulimia Nervosa is excessively influenced by body shape and weight. To qualify for the diagnosis, the binge eating and the inappropriate compensatory behaviors must occur, on average, at least twice a week for period for 3 months (Criterion C).

A *binge* is defined as eating in a discrete period of time an amount of food that is definitely larger than most individuals would eat under similar circumstances (Criterion A1). The clinician should consider the context in which the eating occurred – what would be regarded as excessive consumption at a typical meal might be considered normal during a celebration or holiday meal. A “discrete period of time” refers to a limited period, usually less than 2 hours. A single episode of binge eating need not be restricted to one setting. For example, an individual may begin a binge in a restaurant and then continue it on returning home. Continual snacking on a small amount of food throughout the day would not be considered a binge.

Although the type of food consumed during binges varies, it typically includes sweet, high-calorie foods such as ice cream or cake. However, binge eating appears to be characterized more by an abnormality in the amount of food consumed than by a craving for a specific nutrient, such as carbohydrate. Although individuals with Bulimia Nervosa consume more calories during an episode of binge eating than persons without Bulimia Nervosa consume during the meal, the fractions of calories derived from protein, fat, and carbohydrate are similar.

Individuals with Bulimia Nervosa are typically ashamed of their eating problems and attempt to conceal their symptoms. Binge eating usually occurs in secrecy, or as inconspicuously as possible. An episode may or may not be planned in advance and is usually (but not always) characterized by rapid consumption. The binge eating often continues until the individual is uncomfortably, or even painfully, full. Binge eating is typically triggered by dysphoric mood states, interpersonal stressors, intense hunger following dietary restraint, or feelings related to body weight, body shape, and food. Binge eating may transiently reduce dysphoria, but disparaging self-criticism and depressed mood often followed.

An episode of binge eating is also accompanied by a sense of lack of control (Criterion A2). An individual may be in a frenzied state while binge eating, especially early in the course of the disorder. Some individuals describe a dissociative quality during, or following, the binge episodes. After Bulimia Nervosa has persisted for some time, individuals may report that their binge-eating episodes are no longer characterized by an acute feeling of loss of control, but rather by behavioral indicators of impaired control, such as difficulty resisting binge eating or difficulty stopping a binge once it has begun. The impairment in control associated with binge eating in Bulimia Nervosa is not absolute; for example, an individual may continue binge eating while the telephone is ringing, but will cease if a roommate or spouse unexpectedly enters the room.

Another essential feature of Bulimia Nervosa is the recurrent use of inappropriate compensatory behaviors to prevent weight gain (Criterion B). Many individuals with Bulimia Nervosa employ several methods in their attempt to compensate for binge eating. The most common compensatory technique is the induction of vomiting after an episode of binge eating. This method of purging is employed by 80%-90% of individuals with Bulimia Nervosa who present for treatment at eating disorders clinics. The immediate effects of vomiting include relief from physical discomfort and reduction of fear of gaining weight. In some cases, vomiting becomes a goal in itself, and the person will binge in order to vomit or will vomit after eating a small amount of food. Individuals with Bulimia Nervosa may use a variety of methods to induce vomiting, including the use of fingers or instruments to stimulate the gag reflex. Individuals generally become adept at inducing vomiting and are eventually able to vomit at will. Rarely, individuals consume syrup of ipecac to induce vomiting. Other purging behaviors include the misuse of laxatives and diuretics. Approximately one-third of those with Bulimia Nervosa misuse laxatives after binge eating. Rarely, individuals with the disorder will misuse enemas following episodes of binge eating, but this is seldom the sole compensatory method employed.

Individuals with Bulimia Nervosa may fast for a day or more or exercise excessively in an attempt to compensate for binge eating. Exercise may be considered to be excessive when it significantly interferes with important activities, when it occurs at inappropriate times or in inappropriate settings, or when the individual continues to exercise despite injury or other medical complications. Rarely, individuals with this disorder may take thyroid hormone in an attempt to avoid weight gain. Individuals with

diabetes mellitus and Bulimia Nervosa may omit or reduce insulin doses in order to reduce the metabolism of food consumed during eating binges.

Individuals with Bulimia Nervosa place an excessive emphasis on body shape and weight in their self-evaluation, and these factors are typically the most important ones in determining self-esteem (Criterion D). Individuals with this disorder may closely resemble those with Anorexia Nervosa in their fear of gaining weight, in their desire to lose weight, and in the level of dissatisfaction with their bodies. However, a diagnosis of Bulimia Nervosa should not be given when the disturbance occurs only during episodes of Anorexia Nervosa (Criterion E).

## Subtypes

The following subtypes can be used to specify the presence or absence of regular use of purging methods as a means to compensate for the binge eating:

**Purging type.** This subtype describes presentations in which the person has regularly engaged in self-induced vomiting or misuse of laxatives, diuretics, or enemas during the current episode.

**Nonpurging type.** This subtype describes presentations in which the person has used other inappropriate compensatory behaviors, such as fasting or excessive exercise, but has not regularly engaged in self-induced vomiting or the misuse of laxatives, diuretics, or enemas during the current episode.

## Associated Features and Disorders

**Associated descriptive features and mental disorders.** Individuals with Bulimia Nervosa typically are within normal weight range, although some may be slightly underweight or overweight. The disorder occurs but is uncommon among moderately and morbidly obese individuals. There are suggestions that, prior to the onset of the Eating Disorder, individuals with Bulimia Nervosa are more likely to be overweight than their peers. Between binges, individuals with Bulimia Nervosa typically restrict their total consumption and preferentially select low-calorie (“diet”) foods while avoiding foods they perceive to be fattening or likely to trigger a binge.

There is an increased frequency of depressive symptoms (e.g., low self-esteem) or Mood Disorders (particularly Dysthymic Disorder or Major Depressive Disorder) in individuals with Bulimia Nervosa. In many or most individuals, the mood disturbance begins at the same time as or following the development of Bulimia Nervosa, and individuals often ascribe their mood disturbances to Bulimia Nervosa. However, in some individuals, the mood disturbance clearly precedes the development of Bulimia Nervosa. There may also be an increased frequency of anxiety symptoms (e.g., fear of social situations) or Anxiety Disorders. These mood and anxiety disturbances frequently remit following effective treatment of Bulimia Nervosa. The lifetime prevalence of Substance Abuse or Dependence, particularly involving alcohol or stimulants, is at least 30% among individuals with Bulimia Nervosa. Stimulant use often begins in an attempt to control appetite and weight. A substantial portion of individuals with Bulimia Nervosa also have

personality features that meet criteria for one or more Personality Disorders (most frequently Borderline Personality Disorder).

Preliminary evidence suggests that individuals with Bulimia Nervosa, Purging Type, show more symptoms of depression and greater concern with shape and weight than individuals with Bulimia Nervosa, Nonpurging Type.

**Associated laboratory findings.** Frequent purging behavior of any kind can produce fluid and electrolyte abnormalities, most frequently hypokalemia, hyponatremia, and hypochloremia. The loss of stomach acid through vomiting may produce a metabolic alkalosis (elevated serum bicarbonate), and the frequent induction of diarrhea through laxative abuse can cause metabolic acidosis. Some individuals with Bulimia Nervosa exhibit mildly elevated levels of serum amylase, probably reflecting an increase in salivary isoenzyme.

**Associated physical examination findings and general medical conditions.** Recurrent vomiting eventually leads to a significant and permanent loss of dental enamel, especially from lingual surfaces of the front teeth. These teeth may become chipped and appear ragged and “moth-eaten.” There may be an increased frequency of dental cavities. In some individuals, the salivary glands, particularly the parotid glands, may become notably enlarged. Individuals who induce vomiting by manually stimulating the gag reflex may develop calluses or scars on the dorsal surface of the hand from repeated trauma from the teeth. Serious cardiac and skeletal myopathies have been reported among individuals who regularly use syrup of ipecac to induce vomiting.

Menstrual irregularity or amenorrhea sometimes occurs among females with Bulimia Nervosa; whether such disturbances are related to weight fluctuations, to nutritional deficiencies, or to emotional stress is uncertain. Individuals who chronically abuse laxatives may become dependent on their use to stimulate bowel movements. The fluid and electrolyte disturbances resulting from the purging behavior are sometimes sufficiently severe to constitute medically serious problems. Rare but potentially fatal complications include esophageal tears, gastric rupture, and cardiac arrhythmias. Rectal prolapse has also been reported among individuals with the disorder. Compared with individuals with Bulimia Nervosa, Nonpurging Type, those with the Purging Type are much more likely to have physical problems such as fluid and electrolyte disturbances.

### Specific Culture, Age, and Gender Features

Bulimia Nervosa has been reported to occur with roughly similar frequencies in most industrialized countries, including the United States, Canada, Europe, Australia, Japan, New Zealand, and South Africa. Few studies have examined the prevalence of Bulimia Nervosa in other cultures. In clinical studies of Bulimia Nervosa in the United States, individuals presenting with this disorder are primarily white, but the disorder has also been reported among other ethnic groups.

In clinic and population samples, at least 90% of individuals with Bulimia Nervosa are female. Some data suggest that males with Bulimia Nervosa have a higher prevalence of premorbid obesity than do females with Bulimia Nervosa.

## Prevalence

The lifetime prevalence of Bulimia Nervosa among women is approximately 1%-3%; the rate of occurrence of this disorder in males is approximately one-tenth of that of females.

## Course

Bulimia Nervosa usually begins in late adolescence or early adult life. The binge eating frequently begins during or after an episode of dieting. Disturbed eating behavior persists for at least several years in a high percentage of clinic samples. The course may be chronic or intermittent, with periods of remission alternating with recurrences of binge eating. However, over longer-term follow-up, the symptoms of many individuals appear to diminish. Periods of remission longer than 1 year are associated with better long-term outcome.

## Familial Pattern

Several studies have suggested an increased frequency of Bulimia Nervosa, of Mood Disorders, and of Substance Abuse and Dependence in the first-degree biological relatives of individuals with Bulimia Nervosa. A familial tendency toward obesity may exist, but this has not been definitively established.

## Differential Diagnosis

Individuals whose binge-eating behavior occurs only during Anorexia Nervosa are given the diagnosis of **Anorexia Nervosa, Binge-Eating/Purging Type**, and should *not* be given the additional diagnosis of Bulimia Nervosa. For an individual who binges and purges but whose presentation no longer meets the full criteria for Anorexia Nervosa, Binge-Eating/Purging Type (e.g., when weight is normal or menses have become regular), it is a matter of clinical judgment whether the most appropriate diagnosis is Anorexia Nervosa, Binge-Eating/Purging Type, In Partial Remission, or Bulimia Nervosa.

In certain neurological or other general medical conditions, such as **Kleine-Levin syndrome**, there is disturbed eating behavior, but the characteristic psychological features of Bulimia Nervosa, such as overconcern with body shape and weight, are not present. Overeating is common in **Major Depressive Disorder, With Atypical Features**, but such individuals do not engage in inappropriate compensatory behavior and do not exhibit the characteristic overconcern with body shape and weight. If criteria for both disorders are met, both diagnoses should be given. Binge-eating behavior is included in the impulsive behavior criterion that is part of the definition of **Borderline**

**Personality Disorder.** If full criteria for both disorders are met, both diagnoses can be given.

### **Diagnostic criteria for 307.51 Bulimia Nervosa**

- A. Recurrent episodes of binge eating. An episode of binge eating is characterized by both of the following:
  - (1) eating, in a discrete period of time (e.g., within any 2-hour period), an amount of food that is definitely larger than most people would eat during a similar period of time and under similar circumstances.
  - (2) a sense of lack control over eating during the episode (e.g., a feeling that one cannot stop eating or control what or how much one is eating).
- B. Recurrent inappropriate compensatory behavior in order to prevent weight gain, such as self-induced vomiting; misuse of laxatives, diuretics, enemas, or other medications, fasting, or excessive exercise.
- C. The binge eating and inappropriate compensatory behaviors both occur, on average, at least twice a week for 3 months.
- D. Self-evaluation is unduly influenced by body shape and weight.
- E. The disturbance does not occur exclusively during episodes of Anorexia Nervosa.

*Specify type:*

**Purging Type:** during the current episode of Bulimia Nervosa, the person has regularly engaged in self-induced vomiting or the misuse of laxatives, diuretics, or enemas

**Nonpurging Type:** during the current episode of Bulimia Nervosa, the person has used other inappropriate compensatory behaviors, such as fasting or excessive exercise, but has not regularly engaged in self-induced vomiting or the misuse of laxatives, diuretics, or enemas

### **307.50 Eating Disorder Not Otherwise Specified**

The Eating Disorder Not Otherwise Specified category is for disorders of eating that do not meet the criteria for any specific Eating Disorder. Examples include

1. For females, all of the criteria for Anorexia Nervosa are met except that the individual has regular menses
2. All of the criteria for Anorexia Nervosa are met except that, despite significant weight loss, the individual's current weight is in the normal range.
3. All of the criteria for Bulimia Nervosa are met except that the binge eating and inappropriate compensatory mechanisms occur at a frequency of less than twice a week or for a duration of less than 3 months.

4. The regular use of inappropriate compensatory behavior by an individual of normal body weight after eating small amounts of food (e.g., self-induced vomiting after the consumption of two cookies.)
5. Repeatedly chewing and spitting out, but not swallowing, large amounts of food.
6. Binge-eating disorder: recurrent episodes of binge eating in the absence of the regular use of inappropriate compensatory behaviors characteristics of Bulimia Nervosa (se p.785 for suggested research criteria).

## APPENDIX B

### INITIAL INTERVIEW QUESTIONS

As specific interviews, I will adjust the questions to fit the interviewee. In addition, I will design flow charts for each conversation ( for example, If subject answers “ x” proceed to question 10, if subject answers “y” proceed to question 12, etc.). Before each interview the subjects will be told they are being recorded. All interviews will be recorded and transcribed. I will also take notes during each conversation. PERSONS BEING INTERVIEWED WILL BE REMINDED THROUGHOUT THE COURSE OF THE INTERVIEW THAT THEY MAY NOT MENTION THE NAMES OF ANY OF THE STUDENTS OR PATIENTS THEY ARE DISCUSSING.

1. Please explain/describe your position or specialty within the field of vocal arts and/or sciences.
2. For how many years have you worked with professional singers and voice students?
3. On average, how many students and/or patients do you see per week/month/year?
4. Do you work with primarily male or female singers?
5. Are you involved mainly with performing singers or people who study voice but are focused mainly in other areas such as vocology or music education?
6. Do your students/patients sing mainly in one style? Ie., Music-Theater, Jazz, Opera, Recital, Pop, etc.?

7. What are the main types of vocal problems you have encountered in your studio/practice?
8. How do you approach these types of problems?
9. Acid reflux (GERD) has received a lot of attention in the general media and in vocal circles. Do you believe this to be the leading cause of vocal problems today?
10. Would you agree that GERD itself may be a symptom of other underlying health issues?
11. Eating disorders (ED) are a fairly common problem in the general population. In your estimation, how many students /patients have you seen with an ED or even what you think may be a tendency toward ED?
12. My study is looking specifically at the vocal issues associated with Bulimia Nervosa (BN), a disorder in which food is swallowed and then either regurgitated, purged by the use of laxatives and diuretics, or purged through compulsive exercise. Have you worked with any students/patients you know were, or suspected of being, actively bulimic or in recovery?
13. In your estimation, how many students/patients have you seen with suspected BN?
14. What were their vocal complaints?
15. What types of symptoms did you hear and/or observe?
16. What symptoms, if any, did you observe that were not strictly vocal?

17. Did these students seem to have any particular character traits that set them apart from other students? Things you think may have predisposed them to the development of an ED or traits you found they had in common as a group?
18. Did you observe any other unhealthy coping mechanisms in these singers?
19. Please describe/list any and all vocal issues that you have seen or heard in singers with BN.

## APPENDIX C

### RECRUITMENT LETTER

As Approved by University of Miami's Human Subject Research Office

Hello,

My name is Juanita Marchand Knight. I am in the fifth year of graduate studies in the University of Miami's DMA program in Vocal Pedagogy and Performance. I am conducting research on the effects of Bulimia Nervosa (BN) on the vocal health of singers. I would like to introduce my study to you and invite you to participate. Should you agree to an interview, please respond to my email/letter and we can schedule an interview/begin a correspondence.

I first became interested in this topic while performing as an opera singer. I became very aware of the insecurities and extreme pressures felt by many performers. My interest was renewed during the time I held my teaching assistant position at the University of Miami and worked with young singers. I began researching the subject because of a personal interest and a desire to help my students. In the third year of my doctoral studies, this was developed into my essay topic.

My preliminary research confirms that entertainers are a relatively high risk group for the development of eating disorders. However, little has been published on the topic of voice disorders related to BN. Because of this, voice teachers may be unaware of the statistics, which estimate that as many one in four college-aged women are bulimic (Mary Pipher, *Hunger Pains: The Modern Woman's Tragic Quest for Thinness*, New York: Random House Publishing Group, 1995, page 2). I am attempting to compile a guide for voice teachers so that they might better recognize BN in a student. I would like very much to communicate with otolaryngologists, voice specialists, and/or speech pathologists able to shed light on this delicate subject. Your clinic /studio at --- offers an ideal forum for my questions.

I would be more than happy to discuss my existing research with you and answer any questions you may have. Do not hesitate to contact me if this will help you in your decision making process.

I thank you in advance for your consideration.

Sincerely,

Juanita Marchand Knight, DMA ABD  
University of Miami

## APPENDIX D

### VERBAL CONSENT SCRIPT

As Approved by University of Miami's Human Subject Research Office

#### **The Effects of Bulimia Nervosa on the Voice: A Guide for Voice Teachers**

Hi, my name is Juanita Marchand Knight and I am involved in a research study called *The Effects of Bulimia Nervosa on the Voice: A Guide for Voice Teachers* with Dr. Zdzinski the University of Miami.

The following information describes the research study in which you are being asked to participate. Please listen to the information carefully. At the end, you will be asked to give your verbal consent if you agree to participate.

#### **PURPOSE OF STUDY:**

You are being asked to participate in a research study. The purpose of this study is to list and describe the symptoms and effects of Bulimia Nervosa on the vocal apparatus.

You are being asked to be in the study because you are a voice specialist and have taught, worked with, or treated singers between the ages of 17 and 35.

#### **PROCEDURES:**

You will be asked questions about your knowledge of Bulimia Nervosa and its effects on the voice. I will contact you to interview you and discuss your responses. This interview can be conducted in person or over the phone, depending upon your preference and schedule. The interview will be audio recorded.

The length of time you are expected to participate in the study is 4 hours.

#### **RISKS AND/OR DISCOMFORTS:**

We do not anticipate you will experience any personal risk or discomfort from taking part in this study.

#### **BENEFITS:**

No direct benefit can be promised to you from your participation in this study. The information obtained from the study is hoped to provide insight on a possible cause of vocal problems in the college aged population.

#### **CONFIDENTIALITY:**

You will not be expected to discuss any *personal experience* you may have with this disorder. You will only be asked to discuss your *professional experience* with this disorder. At no time should you mention a student or patient by name. If you wish to give specific information about a case, please designate a number for the

student/patient/case and refer to them only by number. Your name will be used in the study. No names of patients or students will be revealed.

Records will be kept on my personal computer and on CD. The CD will be stored in a safe at my residence. No one besides myself will have access to original records of our conversations and correspondences.

**RIGHT TO DECLINE OR WITHDRAW:**

Your participation in this study is voluntary. You are free to refuse to participate in the study or withdraw your consent at any time during the study. The investigator reserves the right to remove you without your consent at such time that they feel it is in the best interest for you.

**CONTACT INFORMATION:**

Professors Zdzinski will gladly answer any questions you may have concerning the purpose, procedures, and outcome of this project. If you have questions about your rights as a research subject you may contact Human Subjects Research Office at the University of Miami.

Do you have 4 hours to participate in this research study? Would you like to participate now or at a later time? If so, let's schedule it for [*state when, if appropriate*] \*\*\*May change depending upon participant\*\*\*

By your answering the interview questions that I will ask, this means you consent to participate in this research project. Do you have any questions?

## APPENDIX E

### EXPERT INTERVIEWS

#### DR. DONNA LUNDY

JUANITA MARCHAND KNIGHT: My main purpose, as I said, is to be able to list some symptoms and things that voice teachers can watch for and listen for. A lot of my panel was quite surprised to find out that the research indicated there are a lot of cases of bulimia in voice students because logically you would think if it's harmful to the voice that people wouldn't engage in this sort of behavior. And so I am interested in getting some information as to whether you have seen any cases specifically.

DR. DONNA LUNDY: Yes, we've seen plenty of cases of eating disorders and it's hard to just look at bulimia and not to include anorexia because they're usually seen together.

JUANITA MARCHAND KNIGHT: I do have information that indicates that a lot of times anorexia will lead to bulimia and vice versa.

DR. DONNA LUNDY: Yes, and they're usually seen together and they both have very significant effects on the voice. You can say if you're purging and stomach acids are coming up, it can usually burn the back part of the larynx giving what looks like very severe reflux signs but out of proportion to just general reflux. And over time, that can be quite harmful, particularly for the singer who depends on finer control.

JUANITA MARCHAND KNIGHT: So specifically, what they experience is hoarseness, loss of range ....

DR. DONNA LUNDY: It's a combination of vocal symptoms. Usually, they're going to have some hoarseness sometimes, of course, in the early morning, similar to reflux signs. They may have difficulty with their range, difficulty maintaining good vocal quality. They may have some fatigue in their voice depending on their level of nutrition. And if they're really messing up their systems, they may have problems with endurance, maintaining their tone over a period of time, and they may even be so weak, the anorexic, who is in such bad shape, that the underlying breath support can be adversely affected just because they don't have the energy level.

JUANITA MARCHAND KNIGHT: I was wondering if some of the other people with eating disorders who are using laxatives or over exercising would have similar issues or do you think that it would be very different?

DR. DONNA LUNDY: Well it's all in degrees. It depends on how much anyone is doing, and what their level of health and nutrition is, and their hydration level. If they're hydrating, maintaining adequate hydration and their nutritional stores are pretty good, and they're not burning the back of their larynx too much, they may not have as many symptoms as someone who is not able to do so.

JUANITA MARCHAND KNIGHT: In your clinic, do you see mainly one type of singer? Are they mainly Performance Majors, performing singers? Are they Music-Theater, Jazz, or do you have people from all walks of life in there?

DR. DONNA LUNDY: We have every type of singer, the touring diva to the person singing in the Italian restaurant on South Beach and every style of music.

JUANITA MARCHAND KNIGHT: And have you noticed problems to be more prevalent in one area or the other? Is it pretty much the same across the board?

DR. DONNA LUNDY: In terms of the eating disorders?

JUANITA MARCHAND KNIGHT: Yes.

DR. DONNA LUNDY: The eating disorders that we see in singers are usually students who are not that long out of school. Occasionally, you'll see the person in their forties and fifties who's had it all this time. But more often it's younger.

JUANITA MARCHAND KNIGHT: Are they very honest about what's going on?

DR. DONNA LUNDY: Some are. Some people come out and tell us. A lot of times you're suspicious and you'll say something. We don't have a diagnostic way to tell if that's exactly what's wrong, just suspicions.

JUANITA MARCHAND KNIGHT: Would that be based on the severity of their reflux symptoms?

DR. DONNA LUNDY: Combination of that and there may be other signs that you see, inordinate thinness and things of that nature.

JUANITA MARCHAND KNIGHT: Robert Sataloff actually wrote a lot about the tooth enamel, saying that you can actually see it.

DR. DONNA LUNDY: Yes, it can destroy the enamel on the teeth and all sorts of other types of things.

JUANITA MARCHAND KNIGHT: I read about laryngeal webbing as a symptom and I was wondering what sort of affect that would have on the voice?

DR. DONNA LUNDY: I haven't seen webbing from that.

JUANITA MARCHAND KNIGHT: That's a good thing. I read a lot about telangiectasia.

DR. DONNA LUNDY: Yes, that's just varicose veins on the vocal folds.

JUANITA MARCHAND KNIGHT: I have a very complex definition of it in my paper and we're all looking for a bit of clarification. Thank you.

DR. DONNA LUNDY: It's just the vasculature is more prominent.

JUANITA MARCHAND KNIGHT: I read also that singing itself can lead to weakening of the sphincter because of the way the food and different things will be pushed up against it. I was wondering if that's true at all or if you've observed that?

DR. DONNA LUNDY: Singers frequently have a higher incidence of reflux; a lot of it is lifestyle, heavy carbonations, heavy caffeine, eating late at night and then crashing, things of that nature.

JUANITA MARCHAND KNIGHT: Do you think it's possible for people to remain actively bulimic and be successful in the field?

DR. DONNA LUNDY: I would hope not because it's certainly not a healthy lifestyle. I don't know. There's no way to know.

JUANITA MARCHAND KNIGHT: Do you think that performing artists, and even classical singers, would be at a higher risk for developing these kinds of coping mechanisms?

DR. DONNA LUNDY: Performing artists having increased risk of developing eating disorders? Yeah, I mean it has to do with image. It has to do with sense of self and security. And you know, the performer is on the stage so they're always worried about how they look and appear to others and you know sometimes people go to great extents to do what they think is going to improve their stance.

JUANITA MARCHAND KNIGHT: Now I'm thinking that as a speech pathologist and also for voice doctors, and voice specialists dealing with something like bulimia, it all depends on patient compliance I would think, and so, there must be a pretty limited amount of help you can give.

DR. DONNA LUNDY: Well, they need to be treated by the people who specialize in eating disorders which are usually psychologists and the nutritionist, I mean, we can educate and help counsel but certainly we are not going to treat those types of problems. It's got to be by the people who are more expert.

JUANITA MARCHAND KNIGHT: I read and have written a lot already in my proposal, looking at different personality traits of people who are bulimic and singers, looking at perfectionism, anxiety levels, the inability to cope with rejection, the repeated rejection, or perceived rejection, that you might internalize when you're in a voice lesson or in a master class, the anger that you might feel about that and how these kinds of things combined with the pressure to look good could really hurt a person psychologically and lead to these kinds of things. Have you seen a lot of other types of coping mechanisms?

DR. DONNA LUNDY: Yeah, there can be a tendency toward alcoholism and any kind of substance abuse.

JUANITA MARCHAND KNIGHT: In your estimation do you think that it's more common, that there is a higher occurrence of the coping mechanisms, in performing artists than in the general population?

DR. DONNA LUNDY: I'm not sure that I would say that.

JUANITA MARCHAND KNIGHT: Those are all of the formal questions that I have. Anything that you can tell me or any comments that you have are always appreciated.

DR. DONNA LUNDY: Well, I think it's great that you're doing this. I think it's important for everybody who works with performers to be aware of any of the signs and symptoms and to try to help the person to get help basically.

JUANITA MARCHAND KNIGHT: I actually do have one more question. What do you think that a voice teacher can do if they have a singer and they suspect that there's something more serious going on than just a physical problem. I'm sure you know that we have a lot of legal requirements when we're teaching at UM, and elsewhere, I'm sure it's the same. But when I have students approach me with these problems or come to me and I suspect strongly that it's something like that, what could I do?

DR. DONNA LUNDY: You can talk, you can develop a rapport with them, a trusting rapport and then talk with them about the importance of getting help. You know that it's a disease, a disorder, like any other one, that needs help and that it will affect their ability to keep up with the program.

JUANITA MARCHAND KNIGHT: Do you think that it could be beneficial in a vocal program to have a speaker perhaps come in every semester and talk about this; maybe someone with experience in counseling to come in and say to the students: This is a risk. We have also talked about having someone come in and stroke every semester just to keep a record of what is going on with the students over a period of four to six years while they're at the school. I was thinking that having those services in any vocal department would be very useful and that it would also be great to have the students maybe followed in some way, or have easy access to psychologists. One of the articles I read actually said that all voice teachers should have training in psychology because the voice is so tied up with emotion and the self and if you're stressed out and sad, all of these things, it really comes out in the voice.

DR. DONNA LUNDY: Sounds like an appropriate thing.

JUANITA MARCHAND KNIGHT: One of the things I would like to do, in the future, is actually to do research and follow some students, perhaps over the course of a few years. I was going to put that in my questions for further research.

DR. DONNA LUNDY: Sounds like a good idea.

JUANITA MARCHAND KNIGHT: Would you mind if I run into any more questions, if I interview some other people and they have other things to say that spark my curiosity, if I contacted you again?

DR. DONNA LUNDY: Sure, no problem.

JUANITA MARCHAND KNIGHT: Thank you so much for talking to me.

DR. DONNA LUNDY: All right and good luck to you! I hope that you get the information you need.

## DR. KAREN PEELER

JUANITA MARCHAND KNIGHT: First, if you could please explain or describe your position and specialty within the field of vocal arts and sciences.

DR.KAREN PEELER: This is my year of teaching. Since I have been at OSU [Ohio State University], I have been in charge of the graduate program in vocal pedagogy and have taught three classes within the School of Music in Voice Pedagogy; as well as help create a new specialization; a specialization, in singing health, and so I participate in those courses as well, which are predominately team-taught. I also teach private voice, I mean applied studio voice, and have done that for many years. And so that's kind of where I am with that.

JUANITA MARCHAND KNIGHT: Can I just ask what the degree is and what does singing health involve? It sounds really interesting.

DR.KAREN PEELER: There's been a recurring, over at least the last fifteen years, interest in what Dr. Sataloff, Robert Sataloff, has called the singing voice specialist. It's a moniker, a name that he just assigned to voice teachers who work with doctors closely and in voice clinics. But there has been no curriculum or set kind of training. It's teachers who had an interest in anatomy and health, physiology and health, and medical practices, and have just worked to learn about that, sort of as they could. Over the last decade we've become aware nationally that more and more, teachers need and would like to have this training and so there have been collaborative talks between NATS [National Association of Teachers of Singing] and ASHA [American Speech-Language-Hearing Association] and the Voice Foundation in VASTA [Voice and Speech Trainers Association] about how we could pull something together. So OSU decided, I've really been wanting to do this since I came to OSU and about four years ago, I finally had the time to pull together members of the otolaryngology faculty of our College of Medicine, speech pathologists, and voice specialists from speech and hearing department, and colleagues in music and we put together what is called a graduate-interdisciplinary specialization which is a 23-quarter hour curriculum. When we go to semesters, it will be a sixteen to seventeen semester-hour curriculum that for graduate students in the music and speech pathology to, in a systematic and pretty thorough way, gain medical, surgical, voice disorders knowledge in working with singers primarily, but all types of singers, not only classical singers but rock singers, and gospel singers. So we call it a Singing Health Specialist because really, anybody who sings or is a voice teacher, in my view, is a singing voice specialist. And so this is to bring a health element to help teachers and speech pathologists, on the other hand, who don't know much about singers, to work and interface in a professional way with the ENTs [ear, nose, and throat doctors], speech, the voice therapists, the singing teacher and the singer, post injury after they had whatever their problem has been remediated and they have had their voice therapy then we hope it

is the Singing Health Specialist to whom they will be able to be referred, to redevelop their singing in a healthy way that will never get them into the trouble that they have had before. And the other program in the country, that kind of does this, of course, is Ingo Titze's long-established vocology program. But they're a little different in concept, in that, that is more of a research program. It's highly research oriented. There is a research element in our program but ours is more clinically-based and practical-based. And it's a very small program because it's highly mentored. We never have more than six or seven people in it at one time and so far we have had very, very, good luck. The local clinic here hired our first graduate; Sataloff hired our second; our third went on to Ph.D. studies as a singer in speech pathology, and in voice communications. Everybody who's come out of our program has gotten jobs immediately. And they feel that while they, the singers, there have been more singers, of course, there have been about three speech pathologists, but the singers feel that it is this extra information that has helped them a great deal. So, while we're not qualified in it, there's not a national certification for this, we do give a certification here and it appears on their transcript. I'll send you a brochure about it online so you can read a little more.

JUANITA MARCHAND KNIGHT: It sounds wonderful.

DR.KAREN PEELER: Well, it is wonderful and I'm very proud of it. We're constantly tweaking it and as a part of this we have a voice lab that's a really nice four-room suite with a class, a state-of-the-art classroom and a research room and a teaching studio and a reception room that is entirely devoted to pedagogy and the singing health curriculum. I'm going to be retiring in another year and we are now in a search for a senior position to take over my position and I hope to take things a step further. I'm a singer who became interested in pedagogy but I am not really a schooled researcher in the classical sense and we need to have somebody now and there are people out there, such as yourself, who've learned research techniques and have started young in their careers learning the ways of statistics and research models and protocols more and more. So we're looking for someone like that and I think we're going to make a pretty significant hire sometime this spring. So keep your eyes open for what that's going to be.

JUANITA MARCHAND KNIGHT: Definitely. I mean the program sounds wonderful.

DR.KAREN PEELER: Sure. We have a unique situation here and I don't know, I've been to your school and I really think the world of your school, but I don't know, is there a medical school associated with Miami?

JUANITA MARCHAND KNIGHT: There is.

DR.KAREN PEELER: Well, see when you've got a good strong speech and health, speech pathology, speech and hearing department and a good medical school... We have a guy here who's trained really as a fabulous doctor for singers and would help start this. So it can happen anyplace but we're trying to work out the kinks and maybe develop a

template for other people to look at and we'll see where it all goes but we're hoping, not hoping, I'm planning to do it, we're going to get this turned into a standalone. Right now, you have to be at OSU in a degree but I'm hoping that as we go to semesters in 2012, by that time, we'll have turned this into a summers-only; something that people can come and take as a certification or a special curriculum.

JUANITA MARCHAND KNIGHT: That would be incredible. I love those summers-only programs, because you know, like the Masters of Music Ed or Theater Ed that they have at Tallahassee, you can teach all year and then go in the summer.

DR.KAREN PEELER: And then get that done in the summer. Once you get into a teaching position, a lot of schools give you development money to do these things. But anyhow, we'll see how it goes. I think it will happen here.

JUANITA MARCHAND KNIGHT: It sounds like a great postdoctoral program too.

DR.KAREN PEELER: Yes, it would be for that exactly. It would be for that and we have a whole lot of practicing speech pathologists, speech voice therapists who want this training too because they know a lot about voice therapy but they don't know a lot about singers. So we arrange for them to take voice and study different kinds of music styles and stuff like.

JUANITA MARCHAND KNIGHT: I was planning to do Ingo Titze's summer program.

Dr. KAREN PEELER: Well, It's a wonderful program and I have not done it because I was just too involved in teaching but I would recommend it to anybody but I think that this, at least for me, this is a little more practical and useful on a daily basis. If you're going to teach a lot of pedagogy I think his program is especially helpful. This really plumps up your own teaching in the studio quite a bit I have found. So anyway, that's what we do.

JUANITA MARCHAND KNIGHT: That's fantastic. It sounds like you've got the perfect kind of knowledge and background and studio to be participating in my project right now.

DR.KAREN PEELER: Well, I think that this is the kind of thing that all of our research I hope will be centered on for the most part. Not so much, you know, on the electrodes that figure out what the pure form sinuses do or something, but more on practical things that can help in the studio and help the singer stay healthy and grow the voice. And so what you're doing will certainly add to that, I think.

JUANITA MARCHAND KNIGHT: On an average how many students or patients do you see in a week?

DR.KAREN PEELER: Well, I have fifteen students in my studio right now and I've always had at least ten. And then I don't have a whole lot of private students, but maybe two or three private students, not weekly but a couple of times a month, something like that. So, you could say in general, about fifteen students a week from doctoral down to freshmen.

JUANITA MARCHAND KNIGHT: Primarily male or female?

DR.KAREN PEELER: Well it's been a good mix. But this year it's mostly female. I have two male students out of fifteen. And that's just kind of the way that's worked out. And I guess most of my life, I've taught mostly female. But I have taught a good number of men and I love teaching them.

JUANITA MARCHAND KNIGHT: And so are they mainly college students? Are some of them professionals?

DR.KAREN PEELER: Yeah, I have usually one or two high school students along, I have one this year but mostly to help them get ready for college you know, interviews, college auditions and stuff like that.

JUANITA MARCHAND KNIGHT: So the students that you have at OSU, are they primarily performance majors? Do you have a mix from Music Ed?

DR.KAREN PEELER: Most of my students are performance, yes, but I have five graduate students and two of them are pedagogy. We have a Masters in Pedagogy. Two of them are in Pedagogy and the others are in Performance. And my undergrads, oh maybe, I have three BMEs and the rest are performance.

JUANITA MARCHAND KNIGHT: And are they mainly classical? Do you have any in Music-Theater?

DR.KAREN PEELER: We don't have a Music-Theater degree and while a lot of the kids are interested in it, and its fine with me for them to sing music theater rep, this is basically a classically based program.

JUANITA MARCHAND KNIGHT: Well, I mean so many of the musical theater pieces are a lot of vanilla ice cream and things like that. They're great for the young classical singer to sort of loosen up a bit.

DR.KAREN PEELER: Ah well, and the truth is that we just did a production, a Theater, not we, the Music School was involved in it essentially. The Theater did a production of Aida and I don't mean Verdi, I mean Elton John. I thought it was so funny, they got to the end of auditioning about a hundred kids and they didn't have an Aida. And I thought now why did you pick this show if you didn't have an Aida? But anyway, they called over and one of our doctoral students who is beautifully, classically trained went, but had

that knack, went and sang just a knockout performance. It was a stunning performance and an absolute picture perfect template of, in my view, how you can sing stylistically and vocally pleasingly contemporary Broadway music for the classical production. She just did a great job. And never, at any time did you think that she was going to lose her voice or get unhealthy. It was just great and everybody just loved it.

JUANITA MARCHAND KNIGHT: I wish that people believed that a little bit more. I have a lot of young students and hearing some of the risks that they take with their voices and I know what they're going for and how they want to sound but it just hurts my heart sometimes that they..

DR. KAREN PEELER: They'll find out the hard way. I'm sorry. They will find out. First of all, that they will not have a long singing life without a good foundation, a classical foundation. And I'll tell you every single quote expert like Ginette Lavitre, Claudia Petangna, every expert I've talked to in Music-Theater says, 'Generally I have to start, if they have not had classical vocal production and go back and spend a year doing that.' It's just essential. So, you stick to your guns, ok?

JUANITA MARCHAND KNIGHT: Oh, I will. Dr. Alt is a great mentor on that front.

DR.KAREN PEELER: Isn't he just?

JUANITA MARCHAND KNIGHT: Because he would not allow his students to move on from an exercise until he felt that they were connecting their scale properly. Okay and now you can move on to this vowel. He would really build a foundation for them and it was great to watch. He had the guts to do it and I really admire that. So I'd love to know what the main types of vocal problems you've encountered in your studio are and how you've fixed them.

DR.KAREN PEELER: Well, I mean with regard to your subject I have never been absolutely aware of any of my students having trouble with bulimia. The most problems I've encountered are students, a couple of students, with polyps. I had a freshman last year, a sophomore this year, who went to Interlochen last summer and as a counselor and unbeknownst to me, studied all summer with the belt teacher up there. And I am telling you, her voice had a hole in it so big she would get up pass g five, yeah g five, and her voice would just yodel. She couldn't hold a pitch. And it's taken an entire quarter to get her back to vocal parity because she didn't know what she was doing. And the woman, I'm not saying she was a bad teacher, I don't know that for a fact at all, I'm just saying that my student wasn't ready for that and I didn't ever expect that to happen. And, so I've had to fix things like that when people have abused their voices. And I've had some instances of really unhealthy beginnings of nodes, generally, attributed to, almost always, attributed to the way they speak. I work so hard on that now that it's not even funny; the way my students speak, as well as the way they way sing. I've had troubles that I didn't know about. I wondered what was wrong with the voices. I'm thinking of one person, in particular, and only many years after that girl had been a student of mine did she confess

to me that she was heavily on drugs during the time that she had all her vocal problems and I wanted to smack her because I was thinking I was a lousy teacher that I simply didn't know how to, that I couldn't find the answer to her problems and there wasn't any answer I could have given with that kind of carrying on; and allergies, lots of problems with allergies. I had one student with a beautiful voice and a lot of trouble with it because she was a diabetic. And we were constantly having to monitor that and she sometimes, much of the time, wasn't in good control and that would, of course, affect her singing dramatically and she couldn't and she didn't become the singer that I think was in her chops to be, that she had in her voice to be, simply because she couldn't get her diabetes under control. It was an emotional issue but I couldn't, you know, but that's all part of the deal. And so those are the main ones that popped up in my mind that I've had troubles with. I have worked with students who have come out of post surgery, or post treatment, quite a bit and the cause usually has been fairly amateur singers who haven't had much training to begin with and good natural talent. And then, you know, after you get older, natural talent, after a while, won't do the trick for you anymore and you have to figure it out, what you're doing, and they just hadn't figured it out and they developed some kind of vocal injury that had to have treatment. And then when they came back, the doctors don't want you to go back to what you've been doing. They want you to really get some serious study and so I've had the real joy to work with a lot of people like that.

JUANITA MARCHAND KNIGHT: I'm curious about acid reflux.

DR.KAREN PEELER: Oh gosh, yeah. I have it and everybody I know has it.

JUANITA MARCHAND KNIGHT: I've read that it is the leading cause of vocal problems today.

DR.KAREN PEELER: I think it's kind of insidious. You know, for a long time in the nineties you would go to an ENT and they'd say you have TMJ. Everybody had TMJ and I think that's something you can work around but we've had such a huge amount of that because of braces.

JUANITA MARCHAND KNIGHT: Oh?

DR.KAREN PEELER: I really think so many kids have braces and it's an unnatural thing, causes the jaw to become misaligned. In many, many cases, they may have beautiful teeth but it's the jaw that killed them. Anyway, now the thing is reflux; I think everybody has it because of our lifestyles and I mean, I have young people in their twenties who just can't live without prilosec. In fact, I take it periodically. And I'm grateful for it. So, I don't think of that as a first cause but almost always is something that, when I hear a voice raw or rough, I probably don't go to that idea as much. We're very fortunate here. You probably are too, in that, if a student is having a problem, I can get him in to see someone pretty quickly.

JUANITA MARCHAND KNIGHT: Yes, we've been lucky.

DR.KAREN PEELER: And then you begin to get a sense of what needs to happen. I think everybody has, every student I know has reflux just about and they just have to watch it and I give them all the lectures about not eating late at night, and not eating spicy foods and drinking lots of water and etc., etc. And either they do or they don't. It's another one of those things that gets worse as you get older. And you just have to mind your p's and q's.

JUANITA MARCHAND KNIGHT: And would you agree though that GERD could be a symptom of other underlying health issues or even just brought on by stress?

DR.KAREN PEELER: Absolutely, absolutely. And kids are so stressed today and in schools their schedules are enough to kill a horse and they want to do well and they're just meeting impossible deadlines. And it's a rest issue too. Everybody just sounded terrible before they went on break. And before we had our little Thanksgiving break and I thought, "Oh, my gosh, these people are going to sound awful on their juries", and then this week I find, "My gosh they're pulling it together. It sounds great." It's mainly they needed that break. They needed that rest. They went home or they went somewhere and got lots of sleep and somebody was good to them and got rid of the tension for a few days and they just sound great. I don't know what we're trying to do to people but I tell them in their sophomore year, if you survive the sophomore year, you can survive anything up here.

JUANITA MARCHAND KNIGHT: I tell you now that I'm doing K to Eight, I see how it happens. These children... it starts now.

DR.KAREN PEELER: That's the whole private thing. I went to College in New Orleans and that's true for New Orleans kids too because those Catholic, private high schools are very selective. And it's crucial, their parents feel. But my concern about singers, at college age here, is that they don't have any time to reflect. There's no time to sit and be quiet and to listen, and you know, just kind of grow inside emotionally and spiritually. It's just run, run, run, run, run. And I think it's not going to serve them in the short or long term very well.

JUANITA MARCHAND KNIGHT: No, I agree I think in a craft like vocal performance where you are asked to put so much of your heart and soul into interpreting your music...

DR.KAREN PEELER: And you have to, to make an impact it has to be total. Well anyway, there's that, and you're right, I'm sure that stress causes digestive problems and vocal, I know it causes vocal problems. And mostly when I see people in about to break, and I know my students very well, I'll say "stop, go home to bed." There's very little, that you know, a good night's sleep won't help.

JUANITA MARCHAND KNIGHT: This is actually a great direction because a lot of what I've written in my proposal deals with the emotional side of these issues and there are very, very high occurrence rates of eating disorders in the general population and...

DR.KAREN PEELER: I would be interested to find out what you think the aural and visual cues are for this. I have simply not been aware. I've had students with weight problems, of course, and that seems to be more prevalent in my business, at least as I've found it, than people who are bulimic. I just don't have, I haven't had occurrences of really thin, unhealthy looking students. But I don't know that bulimic people are always thin.

JUANITA MARCHAND KNIGHT: Actually for the most part, they're above average weight.

DR.KAREN PEELER: Really?

JUANITA MARCHAND KNIGHT: Yes, if you're anorexic and you're not taking in enough calories, you tend to get very skinny after an initial period where your body goes into starvation and you don't lose weight. If you keep starving yourself you will eventually get skinny. With the bulimic patients, the salivary glands actually take over some of the digestive function, and so, no matter how much you purge, some food is going stay in your stomach, and some calories will be digested through your cheeks so that you might notice some puffy cheeks.

DR.KAREN PEELER: For heaven's sakes.

JUANITA MARCHAND KNIGHT: But a lot of the times, bulimic people will not achieve that thin look that we all suspect they're going for.

DR.KAREN PEELER: One of the things, I've found true ,whether it's good or bad, I don't know, is that my students protect each other, and if they think something is going awry with one of their colleagues, they will usually tell me. And they say I don't know what it is but you need to talk to her or something like that. And so, if I haven't noticed, it's always a kind of a thought, and I start to watch. But again, for the most part, that's had more to do with that they're not attending school, or that they're cutting classes too much or something like that. And I haven't had, I haven't been aware of this, of the bulimia nervosa, anorexia nervosa. I'm looking forward to hearing more about what you find.

JUANITA MARCHAND KNIGHT: Well, I'm really looking forward to bringing this to some sort of a conclusion and being able to move on to a more in-depth maybe study of some particular singers who might volunteer or to go into a University and take some statistics over a period of time, in different departments, see what the Jazz singers are doing versus the Music-Theater versus the Opera students versus the Music Ed people.

As far back as the eighties and nineties, they were saying one in four college-aged women have an eating disorder.

DR.KAREN PEELER: I guess that's probably true.

JUANITA MARCHAND KNIGHT: And a lot of it is tied to social anxiety, perfectionism, and some other character traits that when I researched the singer's personality, I found that there was a lot of overlap. Perfectionism seems to be a big, big one, the high levels of anxiety, and repressed anger that can come from being bullied or criticized, in a really harsh way, in front of a whole bunch of people and you can't say anything or you're twenty years old, and you don't know what to say. I'm interested to know whether you think being a singer, or an actor, or a dancer, or someone who is performing all the time and is in the kind of program at school that we have all been through, whether you think these kinds of things can bring on these coping mechanisms.

DR.KAREN PEELER: Well, I had a talk today with a student of mine who's a grad student, who's new and she was in tears because she didn't make the cut for the callbacks for the opera. And she's just been here a few months and so, I thought she might, because her voice is pretty stunning but, you know, it depends on what they're doing and anyway she didn't make it and we just had to talk about how to use the time, how disappointing. And the voice is huge, it's really maybe Christine Brewer. And the girl is probably sixty to seventy pounds overweight, at least, maybe a hundred. And I just had to say, kindly, there's a lot more to being a singer than a wonderful voice. You have to start there but it's the package. You have the intellect and she does have the temperament for it. But then she's got to work on these other things. And singers that generally seem confident and out-going and tough, the career-headed, the ones heading for career, but usually those are the people that inside are so vulnerable, so very vulnerable. One of the people that I taught in my life, who actually had one of the really biggest careers finally just about twelve years ago, just quit, flat out quit; she almost had a nervous breakdown. She said, "I cannot stand this business", and she simply was emotionally not equipped to handle the politics and the criticism, and, or what she perceived to be criticism, and the toughness of it and being on the road and not having a home base. She simply could not do it. And there are people like that and so I think that they have to figure out who they are and what they can handle.

JUANITA MARCHAND KNIGHT: Well I mean sadly a lot of my colleagues, the ones who went right to the stage, a lot of them are very neurotic, very unhappy, lacking in self-confidence, they live in fear all the time: I'm at the mercy of my voice, what if I get up there and it doesn't work, what if this goes wrong, and I'm successful but I'm not successful enough.

DR.KAREN PEELER: Yeah, you don't know what enough is. This is why we can't have stupid singers. Singers have got to understand how to care for their voice, how it is sustained, how they got where they're going, and how to get out of trouble if they get in trouble, and how to look for trouble and we haven't taught that well. Even yet, we're not

teaching it well enough, I think, in many, many places, and you have to learn how to take care of your instrument, how it's built. I realize that somebody said you don't have to know how a golf club's made to be a good golfer but, you know, most good golfers do know what's in a good club, the balance, and the weight and the metals that are in it. And, no, it may not determine their success as a golfer but most people just want to know that. We just cannot have these stupid singers anymore who just think that their voice will always be there because honest to God, it will not, it will not.

JUANITA MARCHAND KNIGHT: Well, you know I always think about conductors and how they have to know every sound, every instrument, not as intimately as the player but they have to know it. And they have to hear it and I think of myself, I'm my own mini conductor.

DR.KAREN PEELER: That's right.

JUANITA MARCHAND KNIGHT: I want to know everything that's going on in there and I can't see it, unfortunately.

DR.KAREN PEELER: Well also singers, as many people as you sing for will have a different opinion about how you sang. And you've finally have to figure what is my best sound and how do I want to sound and sing like that. You take advice from people, but, at some point, you become ultimately responsible for your own success and your own sound and you have to go with it and so you've got to know what you're hearing, and understand. I'm just a big, big believer that people have really got to understand more about the voice than they have. We require all of our singers to take this very intricate pedagogy course that talks about the acoustics, as well as the way, I imagine you all do too; about how, not only the anatomy, the physiology and acoustics, but just generally what's going on with their pipes. And most of them really want to know. They're really glad about it. And that helps sometimes when the voice starts to go and you don't know why.

JUANITA MARCHAND KNIGHT: When I started at UM, of course, I went into the Pedagogy degree. So I got to take all of the classes and they actually do have the undergrads take pedagogy. They don't have to go all the way to Advanced Vocal Ped but they have some, you know. And they're in there studying the anatomy and all that. I wanted to ask a couple of other questions. I was thinking that it could be useful for people in voice, to have somebody come in and speak with us, even in a very sort of informal kind of lecture environment, at a voice forum or something like that, just to talk to us about the self-esteem issues that you might face and the stress issues, all the things that could be treated at a wellness center, or a health center, or a counseling center at a University. I was thinking that it could be, I mean, I actually don't see why it hasn't been introduced at maybe the first week of the school year.

DR.KAREN PEELER: I think there is. There are some schools that are starting to do what you might call psychology of performance. And it's an elective and it's taught

between, we've had it here, a really savvy music teacher, applied teacher, actually, this particular person was an instrumental teacher, and a psychologist from the psychology department, and they touch on those things but they don't do it in great depth. And I think you're right that there are so many things that need to be included, how to build your career and promote yourself in the ways that the world is demanding now, and different aspects of managing a career are hugely important. It's that we have so many demands made on our curriculum by NACM as well as the local school that it is just nuts. We can't, you know, I don't think we want to become conservatories. I don't really think that's necessarily the best training for somebody but there is just not enough time to give people what they need to actually be competitive. That's why they have to go places in the summer and do extra kinds of things. Because even the best opera workshop program I've ever seen doesn't have enough time in the week, and enough space around it to help people really become proficient as singing actors, and, at least, not as undergrads, and really not even as grads. So this thing you speak about, the need for psychological counseling, particularly geared to the life of the performer is another very important thing that we don't have a really good means to address within the school. We just send them to the counseling centre.

JUANITA MARCHAND KNIGHT: Right. Well, I went to McGill for my undergrad. And it's a little more conservatory style over there than UM.

DR.KAREN PEELER: Yes, I know.

JUANITA MARCHAND KNIGHT: I didn't really have any classes outside the Music School and the Opera Workshop program was a minimum of fifteen hours a week. And it was fabulous. We had acting, we had dance, we had yoga, and we had makeup workshops, just all sorts of wonderful things. And I was so busy, and so stressed out with all my ensembles that despite the fact I had no math courses and no English like the students at UM have, which by the way, I have no idea how they keep up with all those academics and trying to learn to sing and act and dance, it's a wonder that we graduate as many performance majors as we do.

DR.KAREN PEELER: It's not easy. And are they equipped to do what we're trying to tell them that this is what they want to do. That's my concern. We are putting out a lot of people with degrees but do they really have the stuff? Are, are we actually not fooling ourselves a little bit? I think we are.

JUANITA MARCHAND KNIGHT: I think, you know, it's a give and take, because by going to McGill, I really did feel like I had been through a professional performance degree. The Opera Workshop there was very similar to what the apprentice program at l'Opéra de Montréal was like, and I thought, well you know, and I'm getting a bachelor's degree to boot. So, this is fantastic. It was a great program when the Neills were running it.

DR.KAREN PEELER: Oh, is that who ran that? You know I taught at AIMS last summer and a guy named Stephano Algieri was there and he's from McGill now and I don't know if he was there in your time or not.

JUANITA MARCHAND KNIGHT: For a little while.

DR.KAREN PEELER: He brought several students with him who were clearly enthusiastic and really on fire about singing and had had a lot of good training. They really had an edge in terms of their understanding and passion for the art.

JUANITA MARCHAND KNIGHT: Well, I just think that it's a great professional training program. But we spent so much time, even at that, they went to what was wrong. Because we've got a show to put on and we have three weeks to stage it and I don't have time to tell you you're doing this and this and this well, so I have to tell you you're doing these three things wrong and just assume that the other 97 percent is correct. But we had these audition workshops where you would wear your audition clothes and walk across the stage, introduce yourself and leave. And it wasn't about your singing; it was about your presentation.

DR.KAREN PEELER: Sure, well that's important. Oh, it is important.

JUANITA MARCHAND KNIGHT: And I appreciate it so much because I learned so much poise. But on the other hand, I really could have used a little help along the way to tell me , you know, don't go home hating yourself because you were told fifteen different times by fifteen different people that you're wearing the wrong shoes., your hair is this. I was told I was too fat to sing the Doll.

DR.KAREN PEELER: Probably is not true actually.

JUANITA MARCHAND KNIGHT: Well, for their production. They were clear that I was not going to fit in the costume.

DR. KAREN PEELER: But you can't do it here.

JUANITA MARCHAND KNIGHT: Right. We want to cast this little girl. This other little girl will fit in the costume so we're going with her instead of you, and just finding out a lot about stuff so early on was great. It's great because I knew how it was going to be when I got out there. But on the other hand, I think that a lot of these young people just shed a lot of tears. I've been lucky to be a TA and be able to sit with them and say, "Don't worry it's not personal. Don't let it affect you. Don't listen to most of the criticism you hear."

DR.KAREN PEELER: Well, most of the students that I teach here at OSU are not going to have that kind of career, a few will, but most are not. I'm getting older and wiser and I speak a lot to them about their entire live. This is a whole life thing and you've got to

have balance and joy in your life. You cannot be one-sided in your life. And take it easy and have some fun and enjoy what you do along the way because when you get to the end that's what counts. And I think people need to, in my opinion, at least, speak about those things more because this isn't life and death, come on, it isn't brain surgery. And if you take some of that pressure out as you've been speaking about, then it becomes more of a joy and if a person isn't singing for joy because they love to sing then, you know, it doesn't matter what you tell them, they're going to be happy.

JUANITA MARCHAND KNIGHT: For myself, my own personal journey, I found that a lot of learning to sing, at least, in the beginning was getting rid of inhibition and fear and psychological blocks. And for me, a lot of it really was psychological. I knew there was a voice in there. I just couldn't get the whole thing out. And, and so I've always believed that singing was extremely connected to the mind and the emotions, you know, not just working the machine, working the body.

DR.KAREN PEELER: And everybody has their own clock. Some are late-bloomers and some are early-bloomers, and you cannot compare yourself to anybody else because nobody else is you. And these kids, at twenty, are having a breakdown because they don't think they're as good as some of the other people in their school and they're never going to make it. And so, you have to judge this every day along the way, what gives you joy, is there something else that you can do that you want to do, and if not, keep working to become the best you can be, and things take care of themselves, they finally do. Otherwise, you'll just go stark-raving mad.

JUANITA MARCHAND KNIGHT: I read an article where the author her statement was that she believed that all voice teachers should have some psychology courses under their belt. That the Vocology Programs and the Vocal Ped Programs should include strictly psychology classes.

DR.KAREN PEELER: I think that's fine if you've got the time to do it. And in fact, I know a gal who's working on that idea of applying certain kinds of learning theories and finding ways to teach those. But you know, I think that's why what you're doing can be very helpful. You need to be alert to the signs that a problem is there. But I'm not sure you need to deal with that problem yourself because when you go to a voice lesson you don't need to take all your baggage in there with you. You need an environment in which you can leave your baggage at the door and be productive as a singer. And so, I've heard very fine, famous teachers criticized because they do so much psychological counseling. And it's not their job. You've got to be the person that when they come into your studio, it's the place they most want to be that week. It's the one hour that is theirs and where they have real joy in learning. And if they've got troubles, they'll tell you but I don't want to know about everybody's boyfriend and everybody's family problem, and everybody's money complaints, and everybody's health issues unless it affects their singing. They don't need me to know about that. They need me to see them as a beautiful young singer with great talent and potential. And, my job is to bring that out in them.

And, the other stuff, I won't say will take care of itself, but I just don't think it's healthy always for you to know all that stuff about your singers.

JUANITA MARCHAND KNIGHT: No, I definitely agree with that. I'm asking the question because to be honest I'm not sure...

DR.KAREN PEELER: Just like I said, you need to be aware of things but I wouldn't be trying to psychoanalyze my students. That's not what their paying you to do. And, you can get so close to students that you can be ineffective as their teacher. And I've learned that lesson. That's happened to me before and I don't like it because you've lost connection to the best gift that you can give them which is a real good ear for their singing like nobody else has. And so, anyhow, that's a good topic to comment on, I think, or argue about, or whatever.

JUANITA MARCHAND KNIGHT: Well, it's definitely an interesting one. I can see some good in the idea. It can inform your teaching but you shouldn't go into crazy physiological details with them because they would have no idea what you're talking about.

DR.KAREN PEELER: What those are good for is to, as you've said, at every minute, knowing that those details help you determine as a teacher what exercises you're going to give them, how you're going to shape it, how you're going solve the problem at hand. Even if you never use it, you need to know it as a teacher but you don't need to talk to them about for a while until they clearly want to know it.

JUANITA MARCHAND KNIGHT: Right. And I think that if we started giving more psychology courses to Vocal Ped Majors, I think that we would definitely have to caution them to use their knowledge in the same way that they would use their anatomical knowledge.

DR.KAREN PEELER: And, I'm going to tell you, this is very naïve, I know, but I think a lot of it is common sense and a lot of it is loving people, just loving people and if you care about them and always try to be positive about them as a human being, all these other problems begin to fall into line. And if they don't, if they need help those kids will finally know it. They will go get what they need and they may ask you advice about who to go see, if they trust you that much. But I just don't think that you want to get into that with a student. So that would not be my preference because my job with them is to help them become the best singer they can be and I don't want to muddy that up with knowing too many gory details about their personal life. I think it can really make a mess for you.

JUANITA MARCHAND KNIGHT: I think so too and I've seen it lead to a lot of drama in the studio.

DR.KAREN PEELER: Absolutely.

JUANITA MARCHAND KNIGHT: So you know I definitely agree but as I said I'm asking these questions because as far as the psychology of it all goes, I don't believe that I have the answer. I haven't quite arrived at a conclusion how much psychology goes into learning to sing. You know, if you're having marital problems, can your voice teacher help you vocally to get through this period or is it all psychological, things like this that I've been reading about.

DR.KAREN PEELER: I have a doctoral student who's got a lot of personal issues, you know, she's raising a boy completely by herself, with no father, no help and on hardly two dimes to rub together but we don't talk about that. When it comes to her lessons, I just try to help her become a really good singer and remember why she sang in the first place and take her mind off of the gore and tedium for a while that really is every part of her life. And so, I think it's the right thing because I think she also knows that I'm in her corner and when I can, I'll help her.

JUANITA MARCHAND KNIGHT: Well that's great. Actually, those are all of my questions. And I got a lot out of this, thank you.

DR.KAREN PEELER: Well, I hope so. I don't know a whole lot about [bulimia] and I'm sure it's out there and I will look forward to hearing more about what you discover.

JUANITA MARCHAND KNIGHT: Well, thanks. A lot of the symptoms are sort of similar to acid reflux but much more severe, much, much, more severe and chronic.

DR.KAREN PEELER: I don't believe that acid reflux is emotionally-based but I believe that anorexia is almost always. And I had a friend growing up, I grew up in the fifties, we now know, we're still very good friends, she now knows, she was anorexic but nobody knew then what to call it. And it was the classic symptoms of, she had very demanding, high-achieving parents and there was no way in the world that she thought she could meet their expectations and she was just driven crazy by it. But she didn't even know she was and she thought she was going to die. She told me one time, I remember we were teenagers she said, "Karen I think I'm sick, I think I might die." And I just said, "Oh no, you won't, blah, blah", because I didn't know anything about anorexia. We hadn't heard much about it then but she's fine now, and she didn't die, and she's very happy, I'm happy to report.

JUANITA MARCHAND KNIGHT: Well, I'm happy to hear. It's amazing to me that, you know in the eighties this was sort of a big discovery, in the seventies and eighties, and yet, here we are, thirty, forty years later and still, so many of us don't know much about it.

DR.KAREN PEELER: And also we kind of quit talking about it. It's not a cause célèbre anymore it seems like to me as it used to be.

JUANITA MARCHAND KNIGHT: I actually had some colleagues, when I was kicking around this topic in the very beginning, say ‘Well you know but that just wouldn’t happen, I mean you couldn’t have a singer, I mean, you wouldn’t be a singer if you were doing this.’ And I thought to myself, well, I was out performing this summer and one of the singers who had a big part in the show told me all about how she was bulimic.

DR.KAREN PEELER: Oh, my God.

JUANITA MARCHAND KNIGHT: Well, here I am singing out of school professionally and it’s happening. Then I go back to school and the undergrads are telling me about it. So you know if I have proof and personal knowledge of it happening with the little ones to the professionals that means it’s got to be happening with everybody in between, and I think it’s just sad.

DR.KAREN PEELER: Well, this could become really a lifelong thing for you. As material and information comes to the surface you continue to fold it in to what you’re doing and that you become kind of an expert on this topic, which we need to have.

JUANITA MARCHAND KNIGHT: It’s certainly interesting to me so I could do this for a long time.

## DR. MURRAY MORRISON

JUANITA MARCHAND KNIGHT: First I would like to ask if you could explain or describe your position within the field of vocal arts and sciences.

DR. MURRAY MORRISON: I am an otolaryngologist and have been active in voice and voice care in the Pacific Voice Clinic at the University of British Columbia in Vancouver, have started the voice clinic in 1979/1980, worked with a number of other voice professionals, speech pathologist, Linda Rammage, a couple of singing teachers, well-known some, and we did some joint research with some over the years, and I am still actively in practice in the Pacific Voice Clinic. I'm a laryngologist which is a discipline of otolaryngology. I was a full professor at the University of British Columbia, head of the division of laryngology for twenty odd years and active in administration as well as research. In total clinical practice, I guess that's probably enough.

JUANITA MARCHAND KNIGHT: Yes, that's perfect and about how many patients do you see personally in a week?

DR. MURRAY MORRISON: A couple of thousand a year or so.

JUANITA MARCHAND KNIGHT: And do you work with primarily male, female, both?

DR. MURRAY MORRISON: Both. About the same; well, I think in voice, and laryngology, in general, there's a somewhat larger, probably two-thirds female.

JUANITA MARCHAND KNIGHT: Do you think that's because more women are in voice studies or do you think it's because we tend to have more problems?

DR. MURRAY MORRISON: Well, I guess I should go back a little bit. But when I say I do laryngology probably maybe ten percent of the group would be actually performers and they are voice or people who are studying voice from an artistic point of view. Most people I see are people with laryngeal voice problems associated with gastroesophageal reflux or with emotional disorders or with what we call central sensitivity syndromes, irritable larynx, chronic cough, coughing, choking, and then just general hoarseness with anything from cancer to cysts and polyps, and nodules and whatever comes in the door. But it's all laryngeal so it's breathing, swallowing as well as voice in a laryngology practice, and probably a third have a lot of emotional components, and a third are mostly related to gastrointestinal problems, and a third are associated with performing; voice teachers and singers, actors, and things like that.

JUANITA MARCHAND KNIGHT: Is there a very big difference in treating a singer and treating someone from the general population?

DR. MURRAY MORRISON: Not really. I mean performers and singers have the same problems that other people do. Until you look at each individual person, is evaluated, and as an individual, depending on what their problems are.

JUANITA MARCHAND KNIGHT: So I imagine that the performers that you get come from all sorts of different fields, Music-Theater, Opera, Jazz, Educators...

DR. MURRAY MORRISON: Yup, aspiring rock stars, yup.

JUANITA MARCHAND KNIGHT: Well that's great. It's really great because it gives us a nice big picture so I like that a lot. I eventually would love to do a study comparing people in different musical fields, to get some statistics. So that's of one of my further research projects. So you said about a third, you thought were gastrointestinal?

DR. MURRAY MORRISON: Well, when I say that and, this really ties to bulimia, is that one thing which I like to say with patients, and it's a generality that's not really got hard scientific data for all of it, but we do know that about ten percent of our population has symptoms, signs, or whatever of gastroesophageal reflux and my feeling is that probably ninety percent of the people that we see with voice problems come out of that ten percent of the population. So I tend and freely accept that I'm a bit biased and so when we're seeing a person with a voice problem, whether they're a professionally-trained singer or a school teacher or a nurse on a ward, I mean, we sort of assume they're having voice problems, we kind of assume, that they've probably had some association with reflux and it's kind of like it's reflux unless we prove otherwise or feel otherwise. We're strongly, strongly biased towards that and that may be good and it may not be good. Probably some people are getting treated for reflux over and over more than they need to be.

JUANITA MARCHAND KNIGHT: Do you think that it is something that's wrong with our bodies or is that a symptom of our lifestyle?

DR. MURRAY MORRISON: Well, that's a good question, the lifestyle part is for sure. I mean the thing is that gastroesophageal reflux tends to be more often than not associated with obesity and I think as a society, our race in this particular part of the world, is a little more obese than it used to be.

JUANITA MARCHAND KNIGHT: Definitely. That's something that I've come across a lot in this research and the panel did ask me to include some statistics on obesity and weight loss.

DR. MURRAY MORRISON: And where this really ties to bulimia, to sort of cut to the chase a little bit, yes, I always ask patients whether they have had problems with eating disorders. I'm not specific about bulimia but I have a fairly large checklist of questions that they get asked and one of them is a little tick box for eating disorders and, of course, if they tick that box then I'll ask them to tell me more about that and so they'll say I was bulimic for five years between the ages of sixteen and twenty-one and it's called

whatever, or I still am right now. But the thing is, the point is, that bulimia is kind of like a self-induced reflux or a voluntary reflux. And in many respects, the kind of laryngeal medical problems that I see in people with significant gastroesophageal reflux or laryngeal-pharyngeal reflux are the same sort of things that we see in people with bulimia. In other words, the kind of edema, redness, prominent blood vessels, evidence of some vocal cord trauma, in the general population, we see in people with gastroesophageal reflux.

JUANITA MARCHAND KNIGHT: Do you think that, I know there's no way to know, but do you think that people are pretty honest about eating disorders?

DR. MURRAY MORRISON: I would think probably mostly not. I suspect a lot of people don't want to talk about that. But I'm usually pretty good at getting people to tell me, to be open about what's going on, because we've been doing this a long time. And if I suspect that the people I'm seeing might be bulimic, eventually we'll get there when you get to know them better.

JUANITA MARCHAND KNIGHT: Right. I have read that this is a fairly common problem, anyways in the general population, and a lot of my research does indicate that teenage girls.....

DR. MURRAY MORRISON: So, what are your figures? Like about five percent of? I was always told that may be around five percent. I don't know what we quoted in the paper of....

JUANITA MARCHAND KNIGHT: The paper says two to four.

DR. MURRAY MORRISON: Of teenage females?

JUANITA MARCHAND KNIGHT: But this is nineteen-ninety and I found that anywhere between four percent and ten percent in different papers or at least saying that, we know it's at least four percent, we think it might be closer to ten and, of course, the undergraduate girls are the biggest group but then I couldn't find any research with statistics on professional singers or graduate students or anything like that.

DR. MURRAY MORRISON: When I say that most may not want to, it's not that they're being dishonest but they don't want to spread information about their health and particularly their psychological well-being out to the public because that's their job, right? If you've got a director/producer of some show, and they say, "oh yeah, no, they're a little, that person's a little bit screwed up, you know, they may be prone to having problems, so stay away", so they're obviously not going to want to have the whole world know that they're suffering from bulimia or some eating disorder.

JUANITA MARCHAND KNIGHT: And there's so much shame and stigma associated with it anyways.

DR. MURRAY MORRISON: So I think it makes sense to keep a lid on it but they'll often talk to their physician about it, particularly, if asked.

JUANITA MARCHAND KNIGHT: Right, right. So in your article you said that a lot of people were coming in basically complaining about hoarseness and raspiness, a cough in the morning, heartburn, all of which are pretty standard complaints. But you do have some tables here that talk about it in a little bit more detail I think. You had ten subjects, ten patients, five with hoarseness, three with raspiness, three with decreased pitch, sore mouth or throat, you've got two, I believe heartburn and parotid swelling, one each, frequent throat infections two, and three with no complaints. And then the next table has all the sort of medical stuff a lot of the things like telangiectasia, for example, I really want to get a good definition of telangiectasia specifically.

DR. MURRAY MORRISON: Telangiectasia ? What it really means is dilated blood vessels; the kind of little blue lines that older women have on their legs; varicose veins, varicosities, things like that are forms of telangiectasia. Telangiectasia just means a dilated blood vessel close to the surface.

JUANITA MARCHAND KNIGHT: Let's see, we have four cases of that, we have ...

DR. MURRAY MORRISON: When we tend to see these little telangiectasias on the vocal folds it's in response to trauma usually. And so if you have had someone who's really banged up their larynx and they get like a little hemorrhage under the vocal cord that sometimes you see in singers, they get hemorrhages, and it's in the healing process of these repeated traumas that these little dilated capillaries and blood vessels appear because they've been bruised and scarred and then they heal and so that the telangiectasias that you see on the vocal cords are generally taken to be evidence of past trauma and the healing process associated with it.

JUANITA MARCHAND KNIGHT: Well, thank you. That's a great explanation. And then the other stuff we've talked about I think already. I was wondering about webbing.

DR. MURRAY MORRISON: Yeah, well, there was just one. Actually, I think that there was one in that was webbing?

JUANITA MARCHAND KNIGHT: Yes.

DR. MURRAY MORRISON: It's trauma around the anterior commissure, the front of where the vocal cords come together, the anterior of the larynx. That individual may have been born with a web. I don't know, there's no way of knowing whether the repeated trauma was what caused the web because repeated trauma, ordinarily, in other people doesn't cause webbing so if I implied that the webbing was caused by that...

JUANITA MARCHAND KNIGHT: No, actually.

DR. MURRAY MORRISON: It probably wasn't.

JUANITA MARCHAND KNIGHT: It said I believe exactly what you just said now: that there was no way to really tell where it came from. But I just definitely wanted to ask about.

DR. MURRAY MORRISON: Well I think that one of the reasons it's of interest, going back many years to that particular case, is that I think that she was one of the first cases that the light dawned a little bit. I think I spent quite a little bit of time with her because of the web and the other stuff trying to sort things out. I think I eventually did surgery on that and I got to know her well enough and then the bulimia came out and that she had been attending this eating disorders clinic at another hospital with Brian Morris who was the psychiatrist who ran the eating disorders clinic. So I spoke to him and said I've seen quite a few people with what appears to be trauma to their vocal cords who have bulimia and what might the relationship be and could we perhaps see a cohort of, of people from your eating disorders clinic and have a look at their larynx and take some pictures and see if there's anything going on. And so, he funneled over ten or a dozen people who were willing to be examined and basically, we just presented the results of that. So it's not really, it's not a statistically, it's just an experience, clinical experience of looking at some people. You can't say that it's ninety, a percentage of everybody coming to the clinic; it's everybody that was willing to come have a look.

JUANITA MARCHAND KNIGHT: Right but what I mean it's a start. It's fantastic and very relevant for me. And the reason I started this project was because of my studio at UM....

DR. MURRAY MORRISON: Have you ever heard of someone called Bonnie Raphael?

JUANITA MARCHAND KNIGHT: Maybe.

DR. MURRAY MORRISON: A speech pathologist/ singer, she would have retired probably by now. I forget where she was from. She's American, anyway. The first time I gave this paper we presented this was at a Voice Foundation meeting in New York and she was a very well-known voice person in the US at that time, not a physician but a speech pathologist/singer combo, I think. And she came up afterwards and was all excited; she said she was so pleased that someone had presented this because she sees it all the time.

JUANITA MARCHAND KNIGHT: Right. I mean I'm thrilled because like I said I was a teaching assistant at UM. I had a private studio and was working for the Opera Program and I had several of the undergrads come and talk to me about various problems they were having and when I had been away performing I had professionals talking to me about these problems and I knew somebody had to put this on paper because this is happening and we need to know why is it happening and what we can do to help.

DR. MURRAY MORRISON: You might look into see if she's written anything about it.

JUANITA MARCHAND KNIGHT: I definitely will. I'm going to look her up this evening. But I've been thinking a lot about different things that could be done to get statistics and to get more information out there. We have voice forum every Friday at UM and they'll have different speakers and I thought this could be a great thing to have someone come and speak about.

DR. MURRAY MORRISON: Do you think that in a large group of music students whether they're singers or anything, or any kind of university student in that particular age group, that if you set up a questionnaire that was completely confidential and confidentiality was assured and they felt really comfortable with it, do you think that you could get some numbers?

JUANITA MARCHAND KNIGHT: Well that's actually something that I'm really hoping to do.

DR. MURRAY MORRISON: Way to go.

JUANITA MARCHAND KNIGHT: I was unable to do it for this project but that is something that I really, really want to do someday just to get numbers. I would also really like to see if it's possible to follow a few students through their four year program. A lot of the schools I know are talking about setting up strobing right there on campus for the students, so in a place like that it would be doable.

DR. MURRAY MORRISON: Right. But it does get bigger and bigger. I mean, if you were to take a hundred voice students and say okay, we're going to strobe, we're going to get random, we're going to get confidential strobe images from these hundred subjects and then they're also going to fill out a confidential questionnaire as to whether they've had voice problems or eating disorders, or whatever else, and that would be kind of cool, but then if you put that data to a review board because you want to publish it, they'd say well, you don't have any other medical information, how do you know that person isn't just kind of a gastroesophageal problem that is unrecognized and what about all the other things other than that, auto-immune disorders and how do you know that they didn't have an infection or this or that. You'd have to go into things so deeply to give it full validity.

JUANITA MARCHAND KNIGHT: Right. And, I know I would need a team at that point.

DR. MURRAY MORRISON: Yeah and we try that with our residents and fellows, and things like looking at a whole bunch of video-strobe recordings and getting people to try and grade them from the sort of signs that we see of trauma and damage in reflux. And there are a lot of differences of opinions. I mean to get everybody to agree that something is normal or abnormal is often difficult.

JUANITA MARCHAND KNIGHT: But I mean with the gastroesophageal reflux, I think that it must be extremely difficult as you were saying, to really tell the difference unless there's evidence of some really severe trauma, or contact injuries from using a toothbrush for the gag reflex. And I would think with bulimia, that's one of the added risks, the injury that you might sustain from trying to...

DR. MURRAY MORRISON: I don't think so.

JUANITA MARCHAND KNIGHT: No?

DR. MURRAY MORRISON: I mean I don't think that you're ever going to get a toothbrush down around the vocal cords; I think the base of the tongue. I don't think that any injury that we see in the larynx has been directly caused by the instrument. Yeah, I know, I don't think so. You're not going to get an instrument down onto the vocal cords.

JUANITA MARCHAND KNIGHT: Right. So maybe just a throat or tongue injury, sore mouth, sore throat....

DR. MURRAY MORRISON: Yeah, round the base of the tongue, sure, the back of the pharynx, you could certainly potentially see something, but not farther down. For the injury further down the vocal folds are from the retching, the coughing and spasing and having all that acidic gastric contents coming up.

JUANITA MARCHAND KNIGHT: I thought a lot about the acidic stuff coming up, I didn't think as much about the retching itself.

DR. MURRAY MORRISON: I think it's more the retching, the retching and the coughing, and anything together with the acid at the same time.

JUANITA MARCHAND KNIGHT: And I did want to ask actually the difference between hoarseness and raspiness. Are those just semantics?

DR. MURRAY MORRISON: Semantics, yeah. I think hoarseness is a more general term. Anything that isn't nice and clear. What is hoarseness? I mean, it's what I define it to be, you define it to be something a little bit different, and they're both right. So when we talk about being hoarse, as being a voice that is not normal. Some people it might be breathy, some people it might be raspy, someone even might say harsh, some might say squeaky or croaky or whatever and these are all just terms that people use to try to describe what they have. And we often in our clinical situation try to get the patients to describe what they think the problem is and we try not to put words in their mouth. You know, describe your voice problem, well, it's hoarse, well, okay, or it's raspy, or it's croaky or because they're all so general and non-specific.

JUANITA MARCHAND KNIGHT: Right.

DR. MURRAY MORRISON: Have you heard of the GRBAS scale?

JUANITA MARCHAND KNIGHT: No, I haven't.

DR. MURRAY MORRISON: It's used often, more often in Europe than in North America but it could ... "GRBAS" and some people say 'well, look evaluate those five things', and G is just for general, generally how abnormal it is and then R is for roughness B is for breathiness, what was the next one? GR

JUANITA MARCHAND KNIGHT: A?

DR. MURRAY MORRISON: A is for asthenia, like the old man kind of voice and then S is for strain. And that's sort of been used in various parts of the world. It's a little over simplistic but people talk about roughness and breathiness and asthenia and strain and then G is for the general, the general abnormality which is I guess the hoarseness, the raspiness.

JUANITA MARCHAND KNIGHT: There are control problems, I see here, as well as one of the symptoms. I was just wondering if you remember a clear explanation of what they may have meant by that.

DR. MURRAY MORRISON: Control problems? Well, I guess in general and I don't know whether it really relates to that paper or not but in general, singers who have structural abnormalities on their vocal folds whether it's like a unilateral polyp or a nodule or particularly if it's asymmetrical like if you have a stiffness on one vocal cord from some old trauma, an old scar. The difficulties with vocal control almost always occur in register transition, *passaggio* areas so that typically a singer will say I'm just fine as long as I'm singing high in my head voice and I'm fine if I'm deep in my chest voice but it's that D E F where I'm mixing and trying to transition between head voice and chest voice and that's where I have trouble with control. As soon as someone describes that to me, I assume I'm going to find something on their vocal folds which suggests that they are asymmetrically affected; one stiffer, or there's one side with a polyp or whatever. Because it takes a lot more control at the register transition area, I mean to maintain a clear, controlled pitch.

JUANITA MARCHAND KNIGHT: Right, definitely and I know especially with men, they work on that for years. Do they complain about sustaining that register or about transitioning to it or both?

DR. MURRAY MORRISON: Both, I would say.

JUANITA MARCHAND KNIGHT: Okay, great because this is the kind of stuff that my panel wants me to get down. Decreased pitch, that's obvious, so losing high notes I would imagine or low notes ....

DR. MURRAY MORRISON: Might not even have any low notes if it's edema.

JUANITA MARCHAND KNIGHT: Sore mouth and throat that's easy to understand, heartburn but parotid swelling?

DR. MURRAY MORRISON: Parotid swelling? I don't know where that was in. I think it's the parotid gland of the salivary glands in front of the ears.

JUANITA MARCHAND KNIGHT: Oh, and people were really aware of it?

DR. MURRAY MORRISON: Well, I guess there was one subject who with all of the retching and everything actually had something on the salivary glands.

JUANITA MARCHAND KNIGHT: Well, you know I also did find out that if you are very severely bulimic the salivary glands sometimes take over some of the digestion and so you end up with chipmunk cheeks.

DR. MURRAY MORRISON: Well, that's what we're talking about; chipmunk cheeks is parotid swelling.

JUANITA MARCHAND KNIGHT: Got it, fantastic! So frequent throat infections, it seems so obvious after reading your paper but I never would have thought of that. If you're causing all these cuts and things... So those were all the symptoms that were listed here and, I think I have what I need to make a good list. Is there anything else you can think of that teachers might see. I mean I know there's the tooth enamel....

DR. MURRAY MORRISON: I'm not really qualified to talk to you about the psychiatric attributes and what a good psychiatrist would pick up on these people but it would be, if I were going to have another run at this, I would probably again talk to the psychiatrist, or the staff, not necessarily the psychiatrist, in an eating disorders clinic, find out from them what their experience in some of these younger, particularly the younger women because I think the younger female vocal folds are more prone to injury than the younger male vocal cords are. And I don't know how much, I think that bulimia in males are, is probably pretty rare.

JUANITA MARCHAND KNIGHT: Well they say in the wrestling population it's high.

DR. MURRAY MORRISON: Yeah, and maybe horse racing, right?

JUANITA MARCHAND KNIGHT: Maybe, yeah but definitely it comes up again and again, wrestlers.

DR. MURRAY MORRISON: But the thing is, okay, wrestlers and jockeys. But the thing is generally young males after puberty, their vocal folds get quite a bit thicker and tougher and they do not get the same kind of traumatic injuries that females do. They'll

get little nodule and polyps and things that are the same thing. But definitely, females, more so than the males are more prone to injuries; just, because it's a different organ in male and female in adults. I mean, it's half the size and quite a bit more, the tissue seems to be a little more delicate. The larynx is very responsive to testosterone.

JUANITA MARCHAND KNIGHT: Oh, really?

DR. MURRAY MORRISON: The development of the larynx gets big, gets tough.

JUANITA MARCHAND KNIGHT: Oh, of course, that makes sense, doesn't it? Well, and what about, sort of the lower female voices, the bigger voices, are they a bit tougher?

DR. MURRAY MORRISON: I wouldn't say so. It wouldn't be my hunch, it wouldn't be my guess, that that's true. I certainly don't have any data, I've never really studied that but just thinking of all the people that I see I don't think I've seen singers with problems repeatedly, I don't think I see more sopranos than mezzos or anything like that.

JUANITA MARCHAND KNIGHT: And I actually just had one more question, to your knowledge, do your eating disordered patients have a lot of other problems that go along with it? Do they have any other coping mechanisms more than the average person?

DR. MURRAY MORRISON: I don't really have the data on that. So, I can't really say because these were young women who came from eating disorders clinic and I wasn't necessarily privy to all the other stuff that was on their files.

JUANITA MARCHAND KNIGHT: Oh, okay. I just thought that maybe in your checklist...

DR. MURRAY MORRISON: Oh, absolutely, and I'm sure that my data bank on that could be mined if I had a resident or somebody who really wanted to go into it and pick out everybody that had ticked off eating disorders and then finding out if they also ticked off chronic headaches, fibromyalgia, irritable bowel, irritable bladder, all the other stuff that comes with more the emotional disorders, emotionally based, psychiatrically based disorders that we see.

JUANITA MARCHAND KNIGHT: So interesting.

DR. MURRAY MORRISON: And the other thing that you might just pull out is, you might want to bring in the whole subject of muscle tension voice disorders, muscular tension dysphonia. I don't know if you've heard of that.

JUANITA MARCHAND KNIGHT: Yes.

DR. MURRAY MORRISON: There's been a lot written on that over the years. And if you were to look into muscle tension dysphonia or muscle misuse voice disorders. I've

written a lot about that over the years. And the thing is that muscle tension around the larynx generally is built on a platform with lifestyle, emotion, reflux, and technique, co-factors, all of which play a little role. And I guess the bulimia, eating disorders and that sort of stuff would partly be the emotional side and partly the lifestyle side but the kind of people who are have chronic anxiety and depression and the kind of difficulties that would lead toward eating disorders likely have had some muscle tension issues too.

JUANITA MARCHAND KNIGHT: Well, I'll definitely look that up. I wanted to ask as well, I'm sorry I know I said one more question, but some of the other things associated with bulimia, like over exercising and use of laxatives and things like that.

DR. MURRAY MORRISON: I doubt that laxatives would be playing a real big role. Actually, I don't particularly agree with the exercise comment. I think that exercise is good by and large. A lot of the people we see have a lot of general medical conditions that are based on inadequate exercise, the obesity, and some of the problems I see with anxiety, depression, general muscle tension issues often can get vastly better in people who can get into a regular exercise program.

JUANITA MARCHAND KNIGHT: I think what a lot of the teachers that I've heard talk about this, have said that if your body is too tense, if your muscles are clenched you don't sing well and so they're concerned....

DR. MURRAY MORRISON: Well that's true but exercise promotes relaxation not tension; lack of exercise promotes tension.

JUANITA MARCHAND KNIGHT: I support exercising and I think that attitudes are starting to change in a positive way. We had a singer who became a Pilates instructor come in and give us a class and say, 'You just have to remember when you're singing, you don't do the same thing with your core that you're doing when you're doing Pilates. And if you just remember that, you should be fine.'

DR. MURRAY MORRISON: Yeah, I don't see that as an issue.

JUANITA MARCHAND KNIGHT: Well that's good to know, I think that's really encouraging.

DR. MURRAY MORRISON: Yeah, I mean, I think that one of the real health problems in our society, Canada and the US, is inadequate exercise and overeating. I think that the drugs that your body makes and that your brain makes in response to exercise do more good than a lot of the other stuff going on. The endorphins your brain makes are a lot better for treatment for depression than anti-depressants are.

JUANITA MARCHAND KNIGHT: And there has certainly been, in my opinion, an increase in anti-depression and anti-anxiety prescriptions. I know that when I was a

child, it seemed like nobody was seeing a psychiatrist at school and nobody was on medication and now I see really young children being treated.

DR. MURRAY MORRISON: I know, it's crazy, really crazy.

JUANITA MARCHAND KNIGHT: And we definitely have a problem with our Phys Ed program, I'm teaching K to 8 right now.

DR. MURRAY MORRISON: Are you?

JUANITA MARCHAND KNIGHT: And I see a lot of the kids just struggling, struggling through PE class and I have to admit that I'm not in the best shape but....

DR. MURRAY MORRISON: Well, when you look at the classical opera singers, there's every size and shape. There's a pretty even distribution and I think that the ones that look fit, that look healthy are great. And sometimes I see people who are incredibly obese and they still sing great and I say to myself, my gosh, how can...

JUANITA MARCHAND KNIGHT: Well, it does sort of pose a problem for staging and I mean for costuming and for things like that and I've seen it. I know that audiences are getting more and more particular about what they want to see, so there's a lot of pressure.

DR. MURRAY MORRISON: Oh, absolutely. I've haven't seen too many three-hundred pound Carmens around for a while.

JUANITA MARCHAND KNIGHT: Well, I mean you look at what they did with Montserrat Caballé. She recorded everything and sounded fantastic but you never saw her. Unfortunately, or fortunately, I'm not sure, people are getting more and more, like I said, particular about what they want to see.

DR. MURRAY MORRISON: Yeah. Because we also want to be healthy, you know, general health is important too.

JUANITA MARCHAND KNIGHT: But what I really liked about Opera McGill was that they had movement and dance as part of the Opera Program and at least once a week we had some sort of aerobic activity in our in our opera block and that was in addition to any choreography or dance training that we had to go with a specific show. So I was dancing all the time, doing aerobics and all sorts of things when I was at Opera Mc Gill and I thought that was really, really, good. Sometimes I hated it.

DR. MURRAY MORRISON: But it just triggered a couple of other comments. One is hydration. I think if someone is, it would be intuitive to suspect that someone who is suffering bulimia is likely dehydrated. If they're expelling, you know, they're throwing up, getting rid of gastric contents, including a lot of water that's been sucked into the stomach. There's probably some chronic dehydration and there's a lot of stuff written

about the effect of dehydration on the larynx and the vocal cords and then the elasticity of the vocal fold mucosa and the ease of vibration in people who are dry. Not just that they have dry mouth but there's just, there are not enough liquids in the body generally so the dehydration... I'm just trying to think of the name of the research speech pathologist from somewhere in the US who's done a lot of work on this. But if you look into voice and dehydration I'm sure you'll come up with her name. It may pop into my mind in a minute but the other one you mention McGill, Christie Ludlow. I know this is recorded but I'm sure she won't mind if I throw her name in Christie, with a CH, Ludlow. She was director of the voice programs at the NIH in Washington, National Institute of Health. She was the director of the Speech and Voice section. She's recently retired from that but I think she's still there somewhere and she's a McGill grad but has been at the NIH for thirty years. But I spent quite a bit of time in her lab because she was doing some terrific research in various aspects of voice that if you did a search for some of her stuff, I think she was more into neurological diseases and things like that more than this stuff, but I'm trying to think of this other person's name.

JUANITA MARCHAND KNIGHT: Well this is really good because as I said I've been taking research from many different areas and sort of trying to combine it into something about bulimia because it's very easy to find information about reflux, of course, it's abundant.

DR. MURRAY MORRISON: Well, reflux, the reflux is big but the other thing is, it's the general health, the emotional health and just throwing in the hydration aspect as well.

JUANITA MARCHAND KNIGHT: I'm definitely going to look at that dehydration and muscle tension so that gives me some more material. I guess that's about it. I was wondering if it would be all right if I have any questions later if I could email you?

DR. MURRAY MORRISON: Oh, yeah, sure.

## APPENDIX F

### EXPERT BIOGRAPHIES

Speech-Language Pathologist, **Dr. Donna Lundy**, is the co-founder of the Vocal Disorders Clinic at the University of Miami's Sylvester Comprehensive Cancer Center. This clinic, the first in Florida to treat spasmodic dysphonia with Botox, treats professional voice users from all walks of life. She has been at the University of Miami for over twenty years and is an Associate Professor in the Departments of Otolaryngology. Lundy is well known for her work in the field of head and neck cancer rehabilitation and has published several articles and book chapters.

Laryngologist, **Dr. Murray Morrison**, practices at the Pacific Voice Clinic, in British Columbia. For over twenty years he was a full professor and head of laryngology at The University of British Columbia. Morrison founded the voice clinic at UBC in 1979. He has published many research studies and the book, *Management of the Voice and its Disorders*, co-authored with Linda Rammage and Hamish Nichol and published in 1993. Morrison's article -- with Brian D. Morris was part of the inspiration for this paper.

**Dr. Karen Peeler** is head of the Vocal Pedagogy Program at Ohio State University, where she is also a founder of the Singing Health program and Co-director of the Helen Swank Voice Teaching and Research Laboratory. The interdisciplinary program in Singing Health provides a unique collaborative experience for its students. Dr. Peeler has performed widely in the United States and Europe and has received numerous awards for excellence in voice teaching.

## VITA

Juanita Marchand Knight was born in Montréal, Canada on June , 1976. Her interest in music began through her grandfather, James Springer's example. She began singing locally with her Church and Catholic School choirs as a child and began her formal musical education at the age of fourteen at the McGill Conservatory, where she studied both voice and piano. Mrs. Knight graduated from the International Baccalaureate program at LaSalle Catholic Comprehensive High School in 1993. She then completed a Diplôme d'Études Collegiales in Voice from Marianopolis College in 1995, a Bachelor's Degree (2001) from McGill University in Early Music and Vocal Performance, with a minor in Music History; and both a Master's Degree (2003) and Artist's Diploma (2005) in Opera Performance, from McGill University. Mrs. Knight entered the University of Miami's Graduate School in 2005 where she received a Doctor of Musical Arts in Vocal Pedagogy and Performance in 2011. Research projects include: the Mad Songs of Henry Purcell, including an examination of baroque gesture, erotic imagery, double entendre, and historical performance practice as they apply to the teaching of acting in the vocal studio; an examination of autistic children's abilities to process affect in music; and a study of the socio-political reasons behind the mass castration of boy singers in the baroque era. An avid performer, Mrs. Knight began singing professionally with Lakeshore Light Opera in Montréal, Canada in the mid 90s and since has performed extensively in Canada, the United States, and Europe. Mrs. Knight is currently Director of School Music and Liturgy at St. Patrick Catholic School.