THE DEVELOPMENT OF A VALID AND RELIABLE INSTRUMENT TO GRADE THE DIFFICULTY OF VOCAL SOLO REPERTOIRE

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The undersigned, appointed by the Dean of the Graduate School, have examined the dissertation entitled

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and hereby certify that in their opinion it is worthy of acceptance.

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ABSTRACT

The purpose of this study is to design a valid and reliable instrument, the Ralston Repertoire Difficulty Index (RRDI), to measure the difficulty of solo vocal repertoire. Another important aspect of this instrument is its ability to be used by all voice teachers, regardless of their level of experience in teaching in private voice studios. The instrument also was examined for its ability to discriminate among songs by categorizing repertoire into different difficulty levels.

Seven criteria were selected and defined to represent the technical characteristics that contribute to the difficulty of vocal solo repertoire. A measurement instrument incorporating these characteristics was designed to evaluate each characteristic individually.

A pilot study was used to test the completeness and clarity of the defined characteristics as well as to establish validity and preliminary reliability. The RRDI was then completed by 34 faculty members, chosen randomly from individuals listed in the 1994-95 College Music Society (CMS) Directory. Each subject's primary instructional responsibility was teaching voice.

The study found that each of the seven criteria of the RRDI was significantly related to an overall rating established by Boytim. The results of both the pilot and the main study indicated high validity and reliability. Analyses also revealed that the RRDI discriminated across difficulty levels and was used similarly by the more experienced and lesser experienced teachers.

It was concluded that the instrument developed and tested in this study provides voice teachers of all experience levels with a valid and reliable rating system with which to grade the difficulty of vocal repertoire.

TABLE OF CONTENTS

CHAPTER 1

INTRODUCTION

Choosing repertoire is one of the most important decisions music educators must make. The repertoire is critical because inappropriate musical selections can, at best, diminish the efficiency of students' learning and, at worst, damage students' physiological abilities to perform music. Performing appropriate repertoire helps students achieve their maximum potential as musicians.

Teachers alone are responsible for students' repertoire decisions; there are no state or national guidelines that teachers can use to help them make these decisions. Consequently, to build a progressive course of study, music educators must realize that their choice of repertoire is absolutely critical to the music curriculum (Intravia, 1972).

House (1965) contends that repertoire is the textbook for the music classroom; therefore, repertoire selection is critical to the objectives of the course. Williamson (1981) emphasizes this point: "I believe it is the duty of each of us -- not only as educators but

more importantly as artists-musicians -- to take a deep personal look at the literature we choose to perform" (p. 109). De Young (1977) is of the same opinion, writing that "The curriculum must evolve around the music, the quality and selection of which are among the most critical decisions" (p. 26). Further, Grant (1993) contends that selecting music is such an important aspect of music education that choosing inappropriate literature will not only reflect badly on teachers, but also will have a negative influence on the profession.

Teachers should make this critical decision by following four commonly used basic steps: determining the students' physiological and musical capabilities, identifying the objectives and techniques that may be drawn from the music to benefit and appropriately challenge the students, identifying the technical characteristics of the music, and matching the music to the students. These four steps, described more fully below, are applicable to general music classes, ensembles and private instruction. The examples provided here relate to the private voice studio, however, since that is the focus of this project.

Step One: Since no two students are identical, their physical and musical capabilities may vary greatly. The studio voice teacher must assess each student individually to determine strengths and weaknesses and use this information when choosing repertoire for that student.

For example, one student may sing with good breath support but exhibit difficulty in proper vocal placement in the high register. Another student may experience difficulty in vocal production in the low register, but have no difficulty in the high register.

The student must rely on the instructor's expertise and experience when assessing capabilities. For the inexperienced teacher, this task may be very difficult. Inexperienced teachers may not be familiar with various voice types. Thus, knowledge of the technical characteristics required to sing repertoire for any voice classification would help teachers when they are attempting to match the capabilities of their students to the literature.

Step Two: Once the studio voice teacher has determined the capabilities of the student, the teacher must then define objectives and techniques that will

benefit the student. Again, since each student is different, these objectives and techniques may vary among individuals.

Once the teacher has established goals and objectives based on the student's capabilities, literature must be chosen that will build correct technique. This helps the student in a problem area while at the same time challenging the student. Here again, the inexperienced teacher, who does not yet have a comprehensive knowledge of the repertoire, may have difficulty choosing pieces that address the objectives identified for the student. This difficulty makes the matching of repertoire to the student tenuous at best.

Step Three: After the studio teacher has identified objectives and techniques for the student, the teacher must then identify and define the technical characteristics of the music chosen for the student. The teacher must rely on personal experience and expertise because there is no reliable or valid objective alternative. No one has established standard definitions for the technical characteristics of the music, such as range, tessitura, rhythm, etc., with regard to difficulty. Therefore, the teacher must

decide what is easy or difficult, based on personal experience. This task is not easy, especially for the inexperienced teacher.

Step Four: When the studio teacher matches music to the student, the music chosen must not be too difficult or too easy. The student must be able to master all aspects of the chosen repertoire, and the music should be "within the scope of the technical advancement of the performer" (Wilson, 1977, p. 27).

Coffin (1960) explains that mastering the music involves technical proficiency and coordination of all aspects of the music, making the matching process of utmost importance. If a teacher makes an inappropriate match between repertoire and student, frustration, stagnation and loss of motivation are almost certain to develop (Saville, 1991).

It is, of course, important to match the music to individual student's capabilities. If the teacher tries to make the same repertoire selections for two or more students, the teacher may create a situation similar to the egalitarian paradox. According to Emerson (1964), the egalitarian paradox occurs when all students are treated equally, and the difference or

actual inequality increases. Conversely, if equal outcome is desired, the students must be treated as individuals.

For example, when the student who sings with good breath support but exhibits difficulty in proper vocal placement in the high register is given the same goals, objectives and repertoire as the student who experiences difficulty in vocal production in the low register but has no difficulty in the high register, the individual needs of one or both students will not be met. By treating both students as equals with regard to abilities, objectives, and literature assigned, the teacher may ultimately widen the gap between the students' abilities.

This last step, matching repertoire to students, is perhaps the most difficult for all teachers, especially those who are inexperienced. All four steps rely on the subjective judgments of the teacher, and these judgments may not entirely address the needs of the student. Since choosing music by trial and error can be an injustice to the student, a calculated manner of repertoire selection should be used (Martin, 1957). It seems logical then, that both inexperienced and

experienced teachers would benefit from the use of an objective measure to accomplish one or more of these steps. This project was designed to develop a rating instrument through which the technical characteristics of the music may be assessed objectively, so that teachers more accurately can match vocal repertoire to their students' needs and abilities.

Need for the Study

The need for this study is at least three-fold. First, choosing appropriate repertoire will benefit students and teachers. By appropriately matching repertoire characteristics to individual capabilities, the students will not only learn how to sing, but they learn "what it sounds like to sing well" (Alderson, 1979, p.8). Students will progressively develop vocal strengths and remediate weaknesses through literature that is appropriately matched to them. The self-confidence and self-esteem of the students will be enhanced when they demonstrate what they have learned by performing well. Teachers will also gain satisfaction in the students' accomplishments.

Secondly, it is important to select appropriate repertoire if the students are to perform at their

best. Repertoire that is too easy does not demonstrate the performers' skills. If the repertoire is too difficult, neither the performers nor the listeners enjoy the performance (Martin, 1957). As Saville (1991) pointed out, when music is too easy, the advanced performers become bored; if the music is too difficult, the performers become discouraged.

Thirdly, singing inappropriate repertoire can harm performers. The vocal longevity of many promising performers is shortened because they succumb to economic pressures and accept roles that require more vocal demands than they can sustain for a long period of time (Yenne, 1993). Soprano Graziella Sciutti cautions singers who attempt to sing repertoire that is beyond their capabilities:

> Because the voice is a physical thing, part of one's anatomy, and singing is a bit like a sport, the muscles in question must be allowed time to grow and become elastic and resilient. This is why when a promising young singer is immediately asked to sing roles that are too big and too taxing for his or her age, although the voice itself can do it, i.e., can sing the notes, the body doesn't yet have the necessary resilience to sustain such an effort. The voice thus loses its 'bloom' and can also be permanently damaged. The misuse of the available material (singers) lies at the heart of the vocal problem besetting opera today (Yenne, 1993, p. 1).

To fulfill all three needs for students and teachers in matching appropriate repertoire to capabilities, an objective measure is needed to determine the difficulty of repertoire. Therefore, the purpose of this study was to develop a valid and reliable instrument that could be used to grade the levels of technical difficulty of vocal repertoire. The proposed instrument was designed to benefit teachers representing all levels of experience, since repertoire lists available are most appropriate only for use by experienced teachers.

Assumptions

Three assumptions were made concerning this project. Since the purpose was to develop a reliable and valid instrument to measure vocal difficulty, the assumption was made that vocal difficulty could, in fact, be measured.

Secondly, although the focus of this dissertation pertains only to the high female voice, it was assumed that the results could be generalized to all voice types.

Lastly, although the target population here was faculty members listed in the 1994-95 College Music Society (CMS) Directory whose primary instructional responsibility was teaching voice, it was assumed that

other populations could benefit by the results of this study.

Research Questions

The purpose of this project was to develop a valid and reliable instrument with which to grade difficulty levels of vocal repertoire. The following research questions were examined:

1. Is the proposed measurement instrument a valid measure for vocal repertoire difficulty?
2. Is the proposed measurement instrument a reliable measure for vocal repertoire difficulty?
3. Are there differences between more experienced and less experienced voice teachers' use of the measurement instrument as indicated by the ratings assigned to each characteristic?
4. Does the proposed measurement instrument result in discrimination among songs by categorizing repertoire into different levels of difficulty for each of the seven characteristics identified in the instrument?

CHAPTER 2

REVIEW OF LITERATURE

The importance of selecting appropriate repertoire is second to no other task that instructors of voice must consider. There are several ways voice teachers select repertoire for their students, but no matter what the method, making the correct match of repertoire to student should be foremost in instructors' minds. Madsen and Yarbrough (1980) emphasize that, "Regardless of existing materials, the effective music educator needs to develop personal techniques and skills for selecting materials. This includes building one's personal library and references in order to effect goals and objectives consistent with a high level of music instruction" (p. 20).

Since the teacher is the student's major resource for repertoire, the student relies on the teacher to choose appropriate literature of high quality. As early as 1938, Prescott and Chidester voiced concern that "no one person can be expected to be familiar with the whole repertoire" (p. 217). Therefore, teachers must rely on the experience and knowledge of others as

expressed in repertoire lists that are currently available.

In building a personal library of resources for repertoire selection, current reference lists should be considered. The two types of existing vocal repertoire lists are ungraded and graded. Each provides different musical information about solo songs and is formatted to be used in different ways.

Ungraded Vocal Repertoire Lists

The following three repertoire lists are some of the most well-known and widely used references. The synopses below present their organization and types of compositions compiled. These lists are targeted toward advanced and experienced voice students and teachers. This may make their use difficult for young and inexperienced singers and teachers.

Singer's Repertoire

Singer's Repertoire by Berton Coffin (1960) is a four-volume compilation of vocal repertoire, encompassing the Classical, Romantic and Impressionistic eras. It includes titles and composers for approximately 8,000 songs in English, French, German, Italian, Latin, Portuguese, Hungarian, and

Hebrew. These are categorized into nine voice classifications: coloratura soprano, lyric soprano, dramatic soprano, mezzo soprano, contralto, lyric tenor, dramatic tenor, baritone and bass. The range and publisher information also are listed for each song.

Singer's Repertoire is Coffin's attempt to provide singers with literature that is suitable for their voice types. He expressed his belief in the importance of choosing appropriate repertoire by stating, "It is well known to all teachers that a matching of song traits to the strengths and limitations of any singing personality will assure the individual's best success. This is a very difficult thing to do and it is hoped the problem will be made easier by the multiple listings of this work" (p. viii).

While Coffin does provide an extensive repertoire list, the format makes the Singer's Repertoire difficult to use. For example, a singer's voice classification must be determined before this list can be used effectively. Since the repertoire is listed by voice type, and young or inexperienced singers' voices may not have matured or been classified, this list does not assist them. Coffin also does not provide any type

of difficulty rating for each song. Here, again, the young or inexperienced teacher must rely on trial and error when choosing repertoire. Even though Singer's Repertoire is structured for more experienced and mature singers, it is a valuable resource for any singer or voice teacher who is pursuing advanced studies, and it should be included in their personal library.

Repertoire for the Solo Voice

Repertoire for the Solo Voice by Noni Espina (1977) is a two-volume publication intended to aid singers in choosing repertoire. It is an annotated guide to vocal solo repertoire, covering songs from the 13th century to the present. There are approximately 10,000 entries, including works by more than 930 composers, 1,900 poets and from 260 operas. Espina's work includes solo voice repertoire from Great Britain, the United States, Iberia, Italy, France, Germany, Austria, Scandinavia, Russia and several other musical cultures.

Repertoire for the Solo Voice is categorized first by the nationality of the composer and then by the language of the text. Each country's section includes a

brief introduction to the music of that country. For example, the introduction to the British solo vocal repertoire section identifies the major influences on British composers and briefly explains the evolution of the musical style prominent in Britain from the 13th century to the present.

Espina also chose to include title, composer, range, tessitura, appropriate gender (men, women, all voices), lyricist, difficulty of accompaniment, collection in which the song is published, and the publisher. In addition, there is a brief description of each song's musical characteristics, such as tempo, melodic line, and technical demands on the voice.

Perhaps one of the most useful aspects of this repertoire list is the biographical paragraphs for each composer. These one- or two-paragraph biographies give insight into the background of each composer and song.

Repertoire for the Solo Voice is a valuable repertoire resource, but like the Singer's Repertoire, the young or inexperienced singer or teacher may find it difficult to use. Since it is organized by nationality of composer, the singer must know this information before referring to the list. But often,

when a singer or teacher is looking for new repertoire, the name and nationality of the composer is only secondary to matching the literature to the singer's capabilities. In this case, Repertoire for the Solo Voice is not of much use. Additionally, the work does not provide difficulty ratings for the voice. Here again, Espina, like Coffin, targets the more experienced singer or teacher.

Music for the Voice

Music for the Voice by Sergius Kagen (1968) is a one-volume repertoire list including "as many composers of vocal solo music as seems practicable and as many examples of each composer's work as seems advisable for the purpose of giving the reader an opportunity to form a fair idea of this composer's vocal music" (p. xi).

Kagen chose to limit this list to song literature composed after the seventeenth century. Twentieth-century opera, for example, is barely represented. However, Music for the Voice is a practical guide for celebrated airs from popular operas and for solo literature from respected composers.

This repertoire resource lists composers alphabetically with their songs listed alphabetically

thereafter. Each composer listing includes a brief biography of the composer with a list of publishers for the composer's works. Also included are title, range, tessitura, suggested general voice type (i.e., all voices, men's voices, high voices), and short remarks about each song, such as phrasing demands, subject matter and form.

Music for the Voice, like the Coffin and Espina volumes, is a valuable guide to vocal repertoire. However, its shortcomings are similar to Singer's Repertoire and Repertoire for the Solo Voice. It is aimed at the more experienced singer and teacher. For instance, a person using the book must know the composer's name before Music for the Voice can help. It also does not provide a difficulty rating for any of the repertoire, limiting its usefulness by the young and inexperienced singer.

Conclusion

While all of the ungraded repertoire lists are valuable resources and are intended to help match a singer's strengths and weaknesses to the demands of the music, none provides enough information to accomplish this with any precision. Although these volumes state

range and tessitura for the songs, they omit descriptions of the difficulty of the melodic line, phrasing demands, and so forth. At best, they provide a compendium of literature that can match voice with repertoire primarily through trial and error.

Graded Repertoire Lists

There have been attempts to provide a graded repertoire list for young singers. However, the lack of standardization among rating systems is problematic. "Not only is there great disparity between the number of grading levels, but the levels themselves are built on different criteria" (Saville, 1991, p. 18). Because the criteria are highly subjective, terms such as "easy," "moderate" and "difficult" may have a vague definition. While the following graded repertoire lists provide only these general grades, they do contain useful information for the young singer and should be a resource for vocal repertoire.

Solo Vocal Repertoire for Young Singers: An Annotated Bibliography

Solo Vocal Repertoire for Young Singers, edited by Joan Boytim (1982) and sponsored by the National Association of Teachers of Singing, is an annotated

bibliography containing approximately 1,100 titles of folk songs, spirituals, humorous songs and classics that are appropriate for beginning or young singers. The book provides the title and composer or editor of each song, publisher information, key and vocal ranges, language, short descriptive phrases, and general degree of difficulty ratings.

Solo Vocal Repertoire for Young Singers is organized first according to secular, sacred or seasonal categories and secondly, alphabetically according to title, by voice type such as male, female and all voice types. This publication provides difficulty ratings for each song such as I - Easy, II - Moderate, III - Advanced. No criteria are listed to explain how these ratings were assigned, however. Boytim acknowledges this shortcoming and suggests that those songs that are rated as III - Advanced could be considered II - Moderate for the college sophomore.

While this list attempts to help match the difficulty level of repertoire to the abilities of singers, it still does not specify what musical characteristics are considered difficult or easy.

Hence, a more exact definition of criteria is warranted.

State Graded Lists

Many states have graded repertoire lists that high school music associations use for determining contest literature. Saville (1991) surveyed all state high school music associations affiliated with the National Federation of State High School Associations. Out of the 42 states from which responses to the survey were received, Saville found 22 graded music lists. Ten state activity associations used an ungraded list, and four states used an ungraded list in addition to their own published list. Eleven of the states surveyed did not use a repertoire list at all.

As the Saville study indicates, not only do state activity associations differ in their use of repertoire lists, they also have opposing views on whether to use a graded or ungraded list. Further, some state activity associations do not use any type of repertoire list.

While the majority of these lists are updated annually, a process involving committee action, the use of these lists varies from state to state with little or no agreement on the number of graded levels

incorporated. Additionally, the vague definitions of criteria on which a grade is based is typical of the global rating systems available.

Voice Classification

Another system for repertoire selection is voice classification. Teachers use voice classification as the criterion employed to choose repertoire. That is, if a student is classified as a lyric tenor, his repertoire consists of literature written for that specific voice type. However, problems arise with this type of repertoire selection.

Vocal authorities rarely have met on common ground when discussing voice classification. One singer may be placed in different classifications by different teachers. Even the singers may label themselves in a voice classification that conflicts with others' views.

Voices normally are classified by such criteria as range, voice quality, tessitura and register transitions. However, the definitions of these criteria may overlap making classification more difficult. For example, singers may possess range characteristics of one voice category and the voice quality of another category (Jarvis, 1987). Baxter (1989) emphasizes this point:

> "the basic division of human voices into high, middle and low -- respectively sopranos and tenors, mezzo-sopranos and baritones, contraltos and basses -- is a natural phenomenon; only nature does not always provide a neat dividing line and there are voices which straddle two of these compartments" (p. 11).

Since there are many different voice classifications and many subjective criteria for establishing placement, attaching a category to individual voices is not easy. Proper classification, however, is important for maintaining healthy vocal folds and correct breath control. The number of opera stars today who can "legitimately lay claim to both extended and healthy vocal careers is small. By placing a voice in too high or too heavy a classification, vocal burnout and permanent damage may result" (Yenne, 1993, p.1).

Therefore, voice classification should be secondary to choosing repertoire matched to the singer's abilities. In this way the misclassification of the young and the experienced singer can be reduced.

Technical Characteristics of the Music

Another type of repertoire selection is matching the difficulty of the technical characteristics of the music to the abilities of the student. Little research has been done in this area.

Two authors who have worked in this area each focused on the works of a single composer (Hu, 1991; Jones, 1988). These researchers chose the music of Ernst Krenek and Ottorino Respighi, respectively, and developed grading criteria exclusively for the works of the chosen composer.

Hu (1991) used 11 different technical characteristics to grade the difficulty of selected solo vocal works of Krenek. These characteristics were organized into two categories: stylistic analysis and vocal analysis. Tempo, rhythm, melodic line, chromaticism, harmonic foundation, texture, and syllabic versus melismatic vocal passages were considered stylistic characteristics. Phrasing, range, tessitura, and diction were considered vocal characteristics.

Hu then defined each characteristic for three levels of difficulty. The criteria of suitable vocal literature for the elementary singer are as follows:

A. Stylistic elements:

1. The tempo does not change very often and the rhythm is uncomplicated.

2. The tonality is either major or minor with limited use of chromatic alterations.
3. The melodic style consists of simple and chiefly conjunct intervals.
4. Harmonically, the accompaniment has a triadic structure with few dissonances.
5. The texture is primarily homophonic and is supported by doubling.
6. The text setting is syllabic.

B. Vocal elements:

1. Phrases are short and may be two or three measures of 4/4 in length at a moderate tempo.
2. The range covers no more than a major tenth with register changes that are easy to negotiate.
3. The tessitura lies well within the comfortable range for the voice type.
4. The diction involves a comfortable range for the phoneme and syllable that appear and a tempo that permits easy articulation. (Hu 1991, p. 7-8)

The criteria for the intermediate singer were defined as:

A. Stylistic elements:
   1. The rhythm may be of moderate complexity with alternating meters, and tempo may range from very fast to very slow.
   2. The tonality may be major, minor, or moderately chromatic.
   3. Melodic intervals may be disjunct and moderately difficult, but skips may not exceed one octave.
   4. Harmony may be consonant to moderately dissonant and related or not related to the voice part.
   5. Texture may range from very thin to very thick
   6. The text setting may be syllabic or melismatic

B. Vocal elements:
   1. Phrases may be three to five measures of 4/4 at a moderate tempo and may end on middle or low pitches.
   2. The range may extend up to two octaves with moderately difficult register changes.

3. The tessitura should be reasonable for the voice type.
4. The diction may be moderately difficult. The syllabics may appear within a range that requires vowel modification and at a tempo that makes consonants moderately difficult to articulate (Hu, 1991, p. 9-10).

Hu's (1991) definition of criteria for the advanced singer was that the song has no limits stylistically nor vocally, provided that it is suitable for the voice type.

In the study which dealt with the published art songs of Ottorino Respighi, Jones (1988) defined the following five characteristics: diatonic and step-wise melody, harmonic foundation, rhythm, range, and relationship between text and music. Each characteristic was defined for three levels of difficulty.

Jones' levels of difficulty were defined as:

Level 1: a. Vocal melody is primarily diatonic step-wise motion.

b. The accompaniment and resulting harmonies largely support the vocal melody.

c. Symmetrical rhythms.

d. The vocal range is restricted to an octave.

e. Straight-forward relationship between text and music.

Level 2: a. Vocal melody is basically diatonic but includes non-diatonic tones and leaps to an octave.

b. The use of melismas.

c. Symmetrical and asymmetrical rhythms.

d. The vocal range is limited to a tenth.

e. The accompaniment is less directly supportive of the vocal melody; thus functions as an interpretative element in the setting.

f. Subtle relationship between text and music.

Level 3: a. Chromatic vocal melody with leaps in excess of an octave.

b. Difficult melodic intervals.

c. Complex problems of rhythm and text articulation.

d. The accompaniment and vocal melody are syncretic.

e. Vocal range is extended beyond a tenth.

f. Complex relationship between text and music. (Jones, 1988, p. 13)

Since both Hu and Jones limited their studies to the works of Krenek and Respighi, many of the characteristics used to determine difficulty had to encompass the twentieth century techniques used by these composers. While the current project does not disregard solo repertoire written using twentieth century techniques, it is meant to provide more general characteristics to consider when matching repertoire of any period with the abilities of the singer. The works of Hu and Jones have provided a basis from which this project was developed and have demonstrated that repertoire can be measured in terms of difficulty.

Grading Systems

Many music publishing companies use grading systems for rating music. Hagg (1986) conducted a study on the difficulty ratings of band music assigned by music publishers. He surveyed five publishers in an attempt to understand the different philosophies regarding the grading of music for young bands. The results of his study showed that curriculum-based and criterion-based grading are two approaches to grading band music.

Saville (1991) also noted the existence of these two types of publisher grading systems, and offered the following definitions of them:

> Curriculum-based grading is used by those publishing houses that promote a method book. This system matches music selections, in terms of capabilities and concepts already covered, to the appropriate place in the beginning method book. Criterion-based grading involves composers writing within the pre-defined parameters of range, rhythm, keys, tempos, and style appropriate to each different grade level (p. 49).

In both approaches, curriculum-based and criterion-based grading, music is graded according to its technical content. Even though Hagg's study pertained to instrumental music, generalization of the conclusions to vocal music seems appropriate. That is,

all music, both instrumental and vocal, should be graded according to its technical content with pre-defined parameters for the assigning of a difficulty rating.

Instrumental Repertoire Grading

The problem of rating the difficulty of repertoire on the technical characteristics versus a global rating of difficulty for the entire composition is not limited only to vocal repertoire. The majority of grading systems for instrumental literature use global rating systems that average the individual problems and technical requirements of compositions and assign an overall difficulty rating. This procedure does not give accurate indications of the true individual difficulties of each piece. Saville (1991) acknowledges the drawback of overall ratings and comments, "Although the global rating may give an overall view of the difficulty of a piece, it is the matching of individual competencies with the difficulty of the individual parts that will ultimately determine the playability of any composition." (p.1)

Saville conducted a study that provided band directors with an objective evaluation tool with which to rate the difficulty levels of the individual

instrument parts in compositions for band. This objective grading tool addressed six different technical characteristics that contribute to the difficulty of band music. The difficulty of key, range, rhythm/meter, tempo, dynamic and intonation control were rated separately for seventeen band instruments.

Saville reviewed previous studies in the area of grading criteria for band music. By comparing and combining these studies, he concluded that key, range, rhythm/meter, tempo, dynamic and intonation control were the six most important technical characteristics or criteria that represent the difficulty of a composition. Once the criteria were selected, a separate evaluation tool was constructed for the objective measurement of each criterion. All the evaluation tools were constructed in the form of Likert scales, with 5 separate levels.

A pilot study was conducted to analyze the individual evaluation tools according to logic, professional experience, and best personal judgment. Revisions, additions and corrections were made and the tools were redistributed to participants of the pilot

study until a 90 percent agreement between all judges was confirmed.

The pilot study was followed by a field study to test the revised evaluation tools. The results of the field study were then analyzed in terms of ability to predict or correlate with the overall global ratings given by a reputable graded band music list. Additionally, Saville recorded interjudge reliability (agreement among judges) for each of the six characteristics.

Saville found that range is an important predictor for easier compositions, but its importance decreases as the level of difficulty increases. Rhythm and meter had the same tendencies as range. That is, as the overall difficulty of the composition increased, the importance of rhythm and meter decreased. Key was found to be consistently the least effective criterion in determining difficulty, and dynamic control is only important for lower levels of difficulty. Intonation control was found to be important only for the more difficult levels of compositions. Finally, tempo was found to be the best predictor of overall global ratings for all ranges of difficulty.

Although the interjudge reliability of the evaluation tools was approximately 40 percent, Saville reported these differences were due to: (a) asking evaluators to make some subjective judgments once the objective criteria were analyzed, (b) evaluator error, and (c) evaluators misunderstanding the directions for the use the evaluation tools.

One of the most important contributions of Saville's study was that he constructed a computer program that recorded the difficulty ratings of the six characteristics for seventeen band instruments for selected band repertoire. This allows for band directors to match the technical difficulties of the repertoire to the strengths and weaknesses of these individual ensembles.

Summary

The review of literature clearly indicates that voice teachers have little help in selecting appropriate literature for their students, and clarifies the need for a grading instrument with which to measure the difficulty of vocal repertoire. While several resources are available from which repertoire is chosen, there is a lack of a standard format among

music lists and publishers for those that attempt to grade repertoire.

It is apparent that numerous technical characteristics contribute to the difficulty of repertoire. However, the grading of solo vocal repertoire previously has not been based on the identification and evaluation of the technical characteristics of the music. Overall general ratings are currently used, but individual difficulty ratings for each characteristic of the repertoire have yet to be assessed. The overall difficulty rating ("easy", "moderate", "difficult") is helpful in some cases, but a rating of the specific characteristics that contribute to this general rating would be of greater benefit to teachers and students. The use of a valid and reliable grading instrument for the evaluation of the difficulty of vocal repertoire, the construction of which is the purpose of this study, can be of practical assistance to both more experienced and less experienced voice teachers.

CHAPTER 3

METHODOLOGY

Purpose

The purpose of this study is to design a valid and reliable instrument, the Ralston Repertoire Difficulty Index (RRDI), to measure the difficulty of solo vocal repertoire. Another important aspect of this instrument is its ability to be used by all voice teachers, regardless of their level of experience in teaching in voice studios. Thirdly, the RRDI must be able to discriminate among songs by categorizing repertoire into different difficulty levels.

Research Overview

Criteria were selected and defined to represent the technical characteristics that contribute to the difficulty of vocal solo repertoire. A measurement instrument was designed to assess each characteristic individually.

A pilot study was used to test the completeness and clarity of the defined characteristics as well as to establish validity and preliminary reliability. Revisions were made and the study was piloted a second

time to test the additions and corrections. The measurement instrument was mailed to subjects who had agreed to participate in the study.

One of the purposes of this study was to establish the validity of the RRDI. To do this, statistical analyses were performed on the data for each of the seven characteristics to determine whether the RRDI discriminates among songs by categorizing repertoire into different difficulty levels. Criterion validity was also established by correlating the seven characteristics to one another and to an overall global difficulty rating found in existing literature.

Another purpose of this study is to establish the reliability of the RRDI. This was done through separate statistical analyses of the ratings assigned for each of the seven characteristics. These ratings were identified as the dependent variable. With the five songs identified as one independent variable and the participants of the study identified as the other independent variable, statistical analyses yielded interjudge reliability coefficients for each of the seven characteristics.

A further purpose of this study was to examine relationships between more experienced and less experienced voice teachers' use of the RRDI as indicated by the ratings assigned to each characteristic. Separate analyses were performed for each of the seven characteristics with the five songs identified as one independent variable and the experience level of the participants identified as another independent variable. The dependent variable was the difficulty rating assigned.

The Ralston Repertoire Difficulty Index

Methods for assessing difficulty of vocal repertoire using defined criteria have been virtually unexplored. A review of literature revealed two studies that defined various technical characteristics of music as "easy," "moderate" or "difficult" (Hu, 1991; Jones, 1988). These definitions were reviewed, combined and redefined by the researcher into a set of six technical characteristics for this study.

The researcher created definitions for each of these six characteristics reflecting each of the three levels of difficulty, "easy," "moderate" and "difficult," that were to be included in the Ralston

Repertoire Difficulty Index. The following are definitions of each characteristic for each of the three levels of difficulty:

RANGE

Easy	Range is limited to a major tenth.
Moderate	Range is up to one octave plus a fifth with moderate register changes.
Difficult	Range is extended to two octaves and beyond with difficult register changes.

TESSITURA

Easy	Tessitura lies well within the comfortable range for high soprano.
Moderate	Tessitura is moderately high or low but reasonable for high soprano.
Difficult	Tessitura is high or low and may be difficult to sustain.

RHYTHM

Easy	Rhythm is uncomplicated and symmetrical.
Moderate	Rhythm has moderate complexity (alternating meters).
Difficult	Rhythm is complex (compound meters, alternating meters).

PHRASES

Easy Phrases are short (2-3 measures).

Moderate Phrases are up to 3-5 measures long.

Difficult Phrases are long and require strong breath control.

MELODIC LINE

Easy Melodic line is simple, diatonic with conjunct intervals and is syllabic.

Moderate Melodic line may include disjunct and difficult intervals and may include melismas.

Difficult Melodic line is chromatic with leaps of more than an octave.

HARMONIC FOUNDATIONS

Easy Harmonic foundations include triadic accompaniment with few dissonances.

Moderate Harmonic foundations include consonant to moderately dissonant accompaniment that may or may not be related to the voice part.

Difficult Harmonic foundations include dissonance and clear delineation between melody and accompaniment.

Once the six characteristics were defined for all three levels of difficulty, a grading scale for each characteristic was developed. The grading scales were organized in bi-polar adjective scales ranging from 1 ("Easy") to 9 ("Difficult") (See Appendix A).

Pilot Study

A pilot study was completed to address the issues of validity and reliability. A team of experts consisting of six voice teachers at the University of Missouri-Columbia agreed to participate. These experts were full-time or part-time faculty members with years of experience as studio voice teachers ranging from 2 to 40.

The vocal repertoire for this study consisted of five vocal solos for high voice with piano accompaniment, all currently in publication, that were randomly chosen from a researcher-developed cross-list of all pieces that were included in each of three reputable repertoire lists: Boytim (1982), Kagen (1960), and Espina (1977). These three repertoire lists were chosen because they represent the most frequently used reference lists in studio teaching. The five solos, listed as they appear in the RRDI, are:

1. Caro Mio Ben - Giordani
2. Come and Trip It - Handel/Arr. Carmichael
3. Tell Me, Oh Blue, Blue Sky - Giannini, V.
4. Il Neige - Bemberg, H.
5. The Water Mill - Vaughan Williams, R.

Validity of the Pilot

For the RRDI to be a valid measurement of vocal repertoire difficulty, the RRDI must measure what it claims to measure. That is, the six technical characteristics defined in the RRDI must represent the criteria needed to grade the difficulty of vocal repertoire and the six definitions must be complete and easy to understand. Criterion-related validity was also established by correlating RRDI ratings with the overall difficulty rating published in a reputable source.

One of the validity objectives of the pilot study was to acquire expert opinion on the use of the six technical characteristics identified in the RRDI. The subjects were asked individually, and without consultation with one another, to comment on the six characteristics and then list any additional items they

felt were valid criteria for determining the difficulty of vocal solo repertoire.

The RRDI was distributed to the six experts who had agreed to participate in the study. Originally, the RRDI included six technical characteristics to be considered when determining the difficulty of vocal repertoire. They were range, tessitura, rhythm, phrasing, melodic line and harmonic foundations. Four of the six participants, however, suggested that language or linguistic concerns also was a possible contributor to difficulty. Therefore, a seventh characteristic, "pronunciation," was added and defined for the three difficulty levels.

PRONUNCIATION

Easy Pronunciation of consonants and vowels, individually or in combination, is relatively simple with regard to tempo, vocal placement and repetition.

Moderate Pronunciation of consonants and vowels, individually or in combination, is moderately complex with regard to tempo, vocal placement and repetition.

Difficult Pronunciation of consonants and vowels, individually or in combination, is difficult with regard to tempo, vocal placement and repetition.

Another area of concern voiced by the experts dealt with melismatic versus syllabic melodies. The RRDI, in its original form, defined easy melodic lines as syllabic, but neglected to address melismatic passages. Therefore, the moderate and difficult levels for melodic line were revised to include the length of melismas.

Melodic Line

Easy Melodic line is simple, diatonic with conjunct intervals and syllabic.

Moderate Melodic line may include disjunct and difficulty intervals and melismas of moderate length.

Difficult Melodic line may include chromaticism, with leaps of more than an octave and extended melismas.

The RRDI was then piloted a second time for the added characteristic "pronunciation" and the revised melodic line definition. This time, one of the six

experts was unavailable to participate. Consequently, this subject was replaced by another faculty member of the University of Missouri-Columbia whose qualifications met the previous criteria established for the panel of experts.

The subjects were again asked to list additional criteria they felt were valid criteria for determining the difficulty of vocal solo repertoire. All subjects were in agreement that the revised RRDI represented a valid instrument for assessing the difficulty of vocal repertoire (See Appendix B).

Another validity issue addressed by the pilot study was whether the RRDI discriminated among the five selected solos by categorizing repertoire into different difficulty levels for all seven characteristics. Although randomly selected, it was desirable that the solos would represent a range of difficulty, from easy to difficult, so that the ability of the RRDI to categorize repertoire into different difficulty levels for each characteristic could be determined.

Seven Friedman ANOVAs with dependent observations were performed to test for discrimination among songs

for each of the seven characteristics. Results indicated discrimination among songs for all seven characteristics, ($p<.05$, see Appendix C). Thus, the five songs do represent a range of difficulty by categorizing repertoire into difficulty levels ranging from easy to difficult, for each of the seven characteristics. Consequently, the validity of the RRDI and the choice of repertoire for use with the RRDI were accepted.

Criterion-Related Validity of the Pilot

The criterion-related validity of the RRDI was established by correlating the seven characteristics to one another and to an overall global difficulty rating published in Solo Vocal Repertoire for Young Singers: An Annotated Bibliography (Boytim, 1982). This rating system was chosen because it was sponsored by the National Association of Teachers of Singing, Inc. and is generally accepted as a standard rating system by voice teachers across the nation.

Analyses (SAS, 1989) were completed to reveal whether the ratings of the seven characteristics as defined in the RRDI would correlate with the same rating given by Boytim. Correlation coefficients

between each criterion and the overall Boytim rating were calculated to show the relationship of each of the seven criteria to the overall rating. These correlation coefficients range from .468 to .976 (see Table 1) and show that there is a statistically significant relationship between three of the criteria (Phrases, Melodic Line, and Harmonic Foundations) and the overall rating. Conversely, there was no statistically significant relationship between each of the four remaining criteria (Range, Tessitura, Rhythm and Pronunciation) and the overall rating. An examination of the correlation coefficients, however, indicates that positive relationships exist. Thus, the overall rating is related in some way to each of the seven criteria separately.

Table 1 also shows intercorrelation coefficients for the seven criteria. These correlation coefficients range from .051 (tessitura and rhythm) to .986 (tessitura and range). There were statistically significant positive correlations between five pairs of criteria. For the five songs rated by the RRDI, the following pairs of criteria are related at a statistically significant level: Rhythm and Phrases;

Rhythm and Harmonic Foundations; Phrases and Melodic Line; Phrases and Harmonic Foundations.

Since Tessitura and Range were defined in terms of the physical span of notes in the repertoire, the correlation was expected to be moderate to high. The four remaining significant correlations indicate that a strong positive relationship exists within those pairs of criteria. The nonsignificant positive correlations indicate that the relationship is not as strong as for the significant pairings.

Table 1

Intercorrelations between Seven Criteria and Boytim Overall Rating-Pilot Study

	Range	Tess	Rhym	Phra	Melo	Harm	Pron	Boyt
Range	--	.986*	.106	.418	.303	.397	.294	.504
Tessitura			.051	.398	.332	.375	.399	.468
Rhythm				.903*	.776	.927*	.474	.840
Phrase					.939*	.954*	.701	.976*
Melody						.839	.850	.906*
Harmony							.667	.885*
Pronunciation								.606

*$p<.05$.

Reliability of the Pilot

The team of experts completed the RRDI for five vocal solos, to determine whether the instrument could be used reliably, with reliability defined as internal consistency among raters. In other words, if the RRDI is reliable, all subjects will grade the difficulty of the repertoire similarly on all seven characteristics.

Each song was distributed to the six participants in the pilot study, along with the RRDI. Participants provided a difficulty rating on each of the original six characteristics for each solo. Each characteristic was analyzed separately for interjudge reliability by means of analysis of variance (Hoyt, 1941).

The Hoyt analysis of variance technique was used to formulate reliability coefficients because the RRDI rating scale did not lend itself to a split-halves analysis for reliability. Hoyt's technique is a justified alternative because:

> This estimate of the discrepancy is a better one than that obtained by dividing the test into odd and even halves because in the latter case the particular split of the test, which is only one of many possible ways of splitting a test, may be an unlucky division and may result in either an overestimate or an underestimate of the coefficient of reliability. (p. 155)

Interjudge reliability coefficients ranged from .924 to .986. Because of the addition of "Pronunciation" as a technical characteristic and the revision of "Melodic Line," these two characteristics were rated during the second pilot procedure. Table 2 reports interjudge reliability for all seven characteristics. Thus, the RRDI is a highly reliable measure for determining the difficulty of solo vocal repertoire. Analysis of variance data for interjudge reliability can be found in Appendix D. Additional analysis of variance data for interjudge reliability for the re-pilot can be found in Appendix E.

Table 2

Interjudge Reliability of Ralston Repertoire Difficulty Index-Pilot Study

Characteristic	1st Pilot	2nd Pilot
Range	.953	
Tessitura	.968	
Rhythm	.924	
Phrases	.965	
Melodic Line	.962	.982
Harmonic Foundations	.986	
Pronunciation		.985

Final Survey Procedures

After preliminary validity and reliability of the RRDI had been established by the pilot, the RRDI was ready for distribution to the subjects in the main study. Reliability and validity were calculated from the main data. The third and fourth research questions were addressed by analyzing the main data with the following hypotheses:

H_1: There is no statistically significant difference between the mean RRDI ratings assigned by the more experienced and less experienced voice teachers.

H_2: There are no statistically significant differences among the means of the difficulty ratings for the songs assessed by the RRDI.

H_3: There is no statistically significant interaction between the mean ratings of experienced and inexperienced voice teachers and the difficulty of the songs rated by the RRDI.

Research Population

The population for this study was individuals listed in the 1994-95 College Music Society (CMS)

Directory whose primary instructional responsibility was teaching voice, as indicated by the directory's coding system. A random sample of 100 faculty members was chosen for participation in this study.

A preliminary letter (Appendix F) was mailed to the 100 subjects, asking them to return a self-addressed, stamped postcard indicating whether or not they would agree to participate. A total of 41 subjects returned the postcards. Of those who responded, 31 agreed to participate.

A second letter was mailed one month later to the 59 subjects who had not responded (Appendix G). After the second mailing a total of 60 subjects had returned the postcards and 43 had agreed to participate.

A final letter was mailed one month later (Appendix H) to the remaining 40 subjects who had not responded to either of the two previous mailings. At this time, a reminder letter also was mailed to 14 participants who had agreed to participate, but had not returned the completed RRDI (Appendix I). One month later, an additional reminder was mailed to 11 of the subjects who had not returned the RRDI (Appendix J).

Thirty days after the second reminder and the final letters were mailed, the total number of respondents was 71 (71%) with 45 (45%) agreeing to participate in the study. However, only 34 subjects actually returned the RRDI, resulting in a response rate of 34%.

In two cases, the subjects were no longer teaching at the institution identified in the CMS. In both cases, substitute subjects were randomly chosen in the same manner as the original 100 subjects. Letters asking for participation were mailed to these two substitute subjects and the subsequent follow-up letters were sent.

Permission to Photocopy the Musical Selections

The design of this project required that each of the five pieces of repertoire be sent to all subjects who had agreed to participate. Since the cost of purchasing 100 copies of each of the five selected vocal solos was prohibitive, a letter requesting permission to make 50 photocopies of the songs was mailed to each of the publishers (Appendix K). It was assumed that all 100 subjects would not respond at the same time; therefore, the photocopies could be used

more than once. Consequently, permission for only 50 copies was requested.

All of the publishers granted permission to photocopy their respective songs, with several publishers requesting a specific copyright statement to appear on each copy. One publisher asked for payment of a royalty fee for permission to photocopy. The fee of $25 was forwarded to this publisher. Copies of the permission letters are found in Appendix L.

Copies were made of all songs reduced to approximately 60% of the original size and duplicated with two reduced pages per one photocopied page, run front and back. This was done in an effort to reduce duplication and mailing expenses.

Dissemination of the RRDI

A cover letter, the RRDI and photocopies of the repertoire were mailed only to instructors who had returned the postcards and indicated they were willing to participate in the study (Appendix M and B respectively).

The participants were asked to provide their years of experience in studio teaching on the blank provided on the cover of the RRDI. Those responding to the

survey were categorized into two experience levels: 1-13 years of experience, and 14 or more years of experience. The division of experience levels was done by using the median of years of experience of the respondents.

The RRDI was coded numerically in the upper right-hand corner for tracking purposes, and a stamped, self-addressed envelope was included for return mailing. A follow-up mailing identical to the original, with an additional request for immediate response, was sent two months later to those who had not returned their responses to the RRDI (see Appendix I). A final reminder letter was sent one month later to those who still had not returned the completed materials (See Appendix J).

CHAPTER 4

RESULTS

This study examined the reliability and validity of the Ralston Repertoire Difficulty Index, an instrument developed to measure the difficulty of solo vocal repertoire. The results are presented in the following order: criterion-related validity of the RRDI; interjudge reliability of the RRDI; the ability of the RRDI to be used by all voice teachers, regardless of their level of experience in teaching in voice studios; and discrimination among songs, by categorizing repertoire into different difficulty levels for each of the seven characteristics of the RRDI.

RRDI Criterion-Related Validity

The criterion-related validity of the RRDI was established by correlating the RRDI's seven criteria to one another and to Boytim's (1982) overall rating. Pearson's Product Moment Correlations were calculated using the data obtained in the administration of the RRDI.

Analyses yielded correlation coefficients between each criterion and the overall Boytim ratings ranging

from .519 to .979 (see Table 3). All of these positive correlations were statistically significant ($p<.05$). Thus, the overall rating assigned by Boytim is significantly related to each of the seven criteria of the RRDI.

Table 3 also shows intercorrelation coefficients for the seven criteria. These correlations range from .100 to .949. All but two of these correlations were significant ($p<.05$).

Table 3

Correlations Between Each of the Seven Criteria and Each Criteria with Boytim Overall Rating

	Range	Tess	Rhym	Phra	Melo	Harm	Pron	Boyt
Range	--	.949*	.484*	.100	.694*	.506*	.351*	.519*
Tessitura			.670*	.329	.809*	.712*	.526*	.711*
Rhythm				.810*	.868*	.859*	.735*	.979*
Phrase					.780*	.884*	.923*	.868*
Melody						.937*	.891*	.935*
Harmony							.947*	.944*
Pronunciation								.851*

*$p<.05$.

Interjudge Reliability

Each of the seven criterion was analyzed separately for interjudge reliability by means of analysis of variance (Hoyt, 1941). Specific procedures on the Hoyt analysis of variance are explained in the previous description of the pilot study. Analysis of variance data for interjudge reliability for the main study can be found in Appendix N.

Interjudge reliability coefficients ranged from .950 to .989 (see Table 4). The criteria Harmonic Foundations and Rhythm produced the highest reliability coefficients of .989 and .987 respectively. Pronunciation had the lowest reliability of .950. However, reliability coefficients for all seven criteria are very high.

Table 4

Interjudge Reliability of Ralston Repertoire Difficult Index

RRDI Criterion	Reliability Coefficient
Range	.970
Tessitura	.973
Rhythm	.987
Phrases	.970
Melodic Line	.979
Harmonic Foundations	.989
Pronunciation	.950

Validity and Reliability Summary

Criterion-related validity of the RRDI was established by correlating each of the seven RRDI criteria to Boytim's overall difficulty rating. The results indicated that each of the seven criteria was significantly related to the Boytim overall rating. Thus, the criterion-related validity of the RRDI is very high.

Interjudge reliability was established through analysis of variance. The results yielded very high

reliability coefficients for all seven criteria. Therefore, the RRDI was considered to be highly reliable.

Analysis of Ratings Between Experience Levels

Once the validity and reliability of the RRDI were established, the third and fourth research questions were addressed. Possible differences between the more experienced and less experienced voice teachers' use of the measurement instrument to assign difficulty ratings were examined, and the ability of the RRDI to discriminate among songs by categorizing repertoire into different difficulty levels for each of the seven characteristics identified in the RRDI was assessed.

To determine if statistical differences existed between difficulty levels and to test for discrimination among songs, two-factor mixed-model analyses of variance with repeated measures on one factor were performed on the data. One independent variable was identified as repertoire with five subsets consisting of the five songs, while the other independent variable was identified as the level of experience of the voice teachers with two subsets consisting of "less experienced," defined as 1-13 years

of experience, and "more experienced," subjects reporting 14 or more years of experience.

Each of the seven criterion was used as the dependent variable in a separate analysis to test for significant differences with regard to that one criterion. For example, one analysis of variance was performed with the independent variables as described above using as the dependent variable the difficulty rating for Range that was assigned by subjects using the RRDI. Six other two factor mixed-model analyses of variance procedures were performed using the RRDI's ratings for Tessitura, Rhythm, Phrases, Melodic Line, Harmonic Foundations and Pronunciation individually as dependent variables. This resulted in seven analyses of variance.

For each criterion, the following hypotheses were examined:

H_1: There is no statistically significant difference between the mean RRDI ratings assigned by the more experienced and less experienced voice teachers.

H_2: There are no statistically significant differences among the means of the difficulty ratings for the songs assessed by the RRDI.

H_3: There is no statistically significant interaction between the mean ratings of experienced and inexperienced voice teachers and the difficulty of the songs rated by the RRDI.

Where statistically significant differences were found, post hoc analyses were performed to identify where the differences were to be found. The results of these analyses are reported after this section.

Range

Differences between experience levels for Range were not significant $F(1, 32) = .25$, $p>.05$. There were significant differences for Range among the five songs across difficulty levels, $F(4, 32) = 32.57^*$, $p<.05$. The interaction between difficulty ratings of songs and experience level was not significant $F(4, 32) = .18$, $p>.05$ (see Table 5).

Tessitura

Differences between experience levels for Tessitura were not significant $F(1, 32) = 2.51$, $p>.05$. There were significant differences for Tessitura among the five songs across difficulty levels, $F(4, 32) = 37.30^*$, $p<.05$. The interaction between difficulty

ratings of songs and experience level was not significant $F(4, 32) = .96$, $p>.05$ (see Table 6).

Table 5

Summary Table: Analysis of Variance for Range Comparing Experience Levels and Songs

Source	df	F
	Between subjects	
Experience Level	1	0.25
error	32	(3.35)
	Within subjects	
Songs	4	32.57*
Songs/Experience	4	0.18
Error	128	(1.11)

Note: Values enclosed in parentheses represent mean square errors. Means and standard deviations are reported in Appendix O. *$p<.05$.

Table 6

Summary Table: Analysis of Variance for Tessitura Comparing Experience Levels and Songs

Source	df	F
	Between subjects	
Experience Level	1	2.51
error	32	(3.94)
	Within subjects	
Songs	4	37.30*
Songs/Experience	4	0.96
Error	128	(1.25)

Note: Values enclosed in parentheses represent mean square errors. Means and standard deviations are reported in Appendix O. *$p<.05$.

Rhythm

Differences between experience levels for Rhythm were not significant $F(1, 32) = .05$, $p>.05$. There were significant differences for Rhythm among the five songs

across difficulty levels, $F(4, 32) = 82.42^*$, $p<.05$. The interaction between difficulty ratings of songs and experience level also was significant for Rhythm, $F(4, 32) = 2.88^*$, $p<.05$ (see Table 7).

Table 7

Summary Table: Analysis of Variance for Rhythm Comparing Experience Levels and Songs

Source	df	F
	Between subjects	
Experience Level	1	0.05
error	32	(2.67)
	Within subjects	
Songs	4	82.42*
Songs/Experience	4	2.88*
Error	128	(1.29)

Note: Values enclosed in parentheses represent mean square errors. Means and standard deviations are reported in Appendix O. *$p<.05$.

Phrase

Differences between experience levels for Phrase were not significant $F(1, 32) = .10$, $p>.05$. There were significant differences for Phrases among the five songs across difficulty levels, $F(4, 32) = 22.17^*$, $p<.05$. The interaction between difficulty ratings of songs and experience level was not significant $F(4, 32) = .58$, $p>.05$ (see Table 8).

Melodic Line

Differences between experience levels for Melodic Line were not significant $F(1, 32) = 3.50$, $p>.05$. There were significant differences for Melodic Line among the five songs across difficulty levels, $F(4, 32) = 45.60^*$, $p<.05$. The interaction between difficulty ratings of songs and experience level was not significant $F(4, 32) = .29$, $p>.05$ (see Table 9).

Harmonic Foundations

Differences between experience levels for Harmonic Foundations were not significant $F(1, 32) = 2.24$, $p>.05$. There were significant differences for Harmonic Foundations among the five songs across difficulty levels, $F(4, 32) = 92.47^*$, $p<.05$. The interaction between difficulty ratings of songs and experience

level was not significant $F(4, 32) = .68$, $p>.05$ (see Table 10).

Table 8

Summary Table: Analysis of Variance for Phrases Comparing Experience Levels and Songs

Source	df	F
	Between subjects	
Experience Level	1	0.10
error	32	(3.69)
	Within subjects	
Songs	4	22.17*
Songs/Experience	4	0.58
Error	128	(0.95)

Note: Values enclosed in parentheses represent mean square errors. Means and standard deviations are reported in Appendix O. *$p<.05$.

Table 9

Summary Table: Analysis of Variance for Melodic Line Comparing Experience Levels and Songs

Source	df	F
	Between subjects	
Experience Level	1	3.50
error	32	(4.04)
	Within subjects	
Songs	4	45.60*
Songs/Experience	4	0.29
Error	128	(1.29)

Note: Values enclosed in parentheses represent mean square errors. Means and standard deviations are reported in Appendix O. *$p<.05$.

Pronunciation

Differences between experience levels for pronunciation were not significant $F(1, 32) = 1.86$, $p>.05$. There were significant differences for

Pronunciation among the five songs across difficulty levels, $F(4, 32) = 19.81^*$, $p<.05$. The interaction between difficulty ratings of songs and experience level was not significant $F(4, 32) = .78$, $p>.05$ (see Table 11).

Table 10

Summary Table: Analysis of Variance for Harmonic Foundations Comparing Experience Levels and Songs

Source	df	F
	Between subjects	
Experience Level	1	2.24
error	32	(2.85)
	Within subjects	
Songs	4	92.47*
Songs/Experience	4	0.68
Error	128	(1.13)

Note: Values enclosed in parentheses represent mean square errors. Means and standard deviations are reported in Appendix O. *$p<.05$.

Table 11

Summary Table: Analysis of Variance for Pronunciation Comparing Experience Levels and Songs

Source	df	F
	Between subjects	
Experience Level	1	1.86
error	32	(4.10)
	Within subjects	
Songs	4	19.81*
Songs/Experience	4	0.78
Error	128	(1.94)

Note: Values enclosed in parentheses represent mean square errors. Means and standard deviations are reported in Appendix O. *$p<.05$.

Post Hoc Test of Differences

Significant differences among difficulty of song ratings were reported for all seven criteria of the RRDI. Therefore, a Tukey honestly significant

differences comparison was calculated for each criterion to show where the differences in difficulty ratings among songs occurred.

Analysis of ratings for Range, Rhythm, Melodic Line and Harmonic foundations indicate that for each of these criteria, all pair-wise comparisons among the five songs were significantly different from each other, ($p<.05$; see Table 12). For Tessitura, all but one of the comparisons were significant at $p<.05$. There was no significant difference between Tessitura ratings for Song 2 and Song 4.

Tukey calculations for Phrase showed significant differences among songs, $p<.05$, for all but three comparisons. No significant differences were found for the following comparisons: Song 3 and Song 4; Song 3 and Song 5; and Song 4 and Song 5.

The result of Tukey values calculated for Pronunciation indicate that all but two pair-wise comparisons were significant, $p<.05$. No significant differences were found between Pronunciation ratings for Song 3 and Song 4 or Song 4 and Song 5.

Table 12

Tukey Honestly Significant Differences

	Songs				
RRDI Criteria	1	2	3	4	5
Range	2.09_a	3.30_b	4.70_c	3.09_d	2.27_e
Tessitura	2.27_a	3.24_b	5.41_c	3.27_b	3.09_d
Rhythm	1.44_a	3.53_b	5.41_c	2.77_d	5.59_e
Phrase	2.18_a	3.15_b	3.92_c	3.97_c	3.97_c
Melodic Line	2.00_a	4.03_b	5.50_c	4.45_d	4.77_e
Harmonic Foundations	1.50_a	2.83_b	5.62_c	4.42_d	5.38_e
Pronunciation	2.12_a	3.18_b	4.27_c	4.47_{cd}	4.62_d

Note. Means in the same row that do not share subscripts differ at $p<.05$ in the Tukey honestly significant difference comparison. Means and standard deviations are reported in Appendix O.

Summary of Results

The results of this study show the RRDI to be a valid and reliable instrument with which to grade the

difficulty of vocal repertoire. By establishing criterion-related validity through correlation coefficients, the seven criteria of the RRDI were significantly correlated to an already established overall rating. High reliability coefficients were also reported for all seven criteria of the RRDI through analysis of variance.

Further, this study provides evidence that the RRDI is consistent when used by voice teachers with varying levels of experience in teaching in voice studios. The results indicate that the RRDI discriminates between songs by categorizing repertoire into different difficulty levels.

CHAPTER 5

CONCLUSIONS AND DISCUSSION

One purpose of this study was to examine the reliability and validity of a difficulty rating scale for solo vocal repertoire. Another purpose was to test for differences between the more experienced and less experienced voice teachers' use of the instrument as indicated by the ratings assigned to each criterion of the Index, and to see if the RRDI discriminates among songs by categorizing repertoire into different difficulty levels for each of its seven component characteristics.

In a preliminary phase, statements from previous research were translated by the researcher into a set of seven technical characteristics that contribute to the difficulty of vocal repertoire. These characteristics depicted three levels of difficulty: "easy," "moderate," and "difficult" for use in the RRDI.

A pilot study was done to test the completeness and clarity of the seven criteria defined in the RRDI as well as to establish validity and preliminary

reliability. These results indicated that the RRDI's definitions of criteria for each difficulty level to be complete and thorough. The pilot study results also indicated high validity and reliability.

After the pilot study, thirty-four subjects in the main study used the RRDI to evaluate five randomly chosen vocal solos for high female voice with piano accompaniment.

Conclusions

To determine criterion-related validity, Pearson's Product Moment Correlation Coefficients were calculated on the data generated by the RRDI to compare ratings resulting from the RRDI to ratings provided by an expert in the field (Boytim, 1982). This procedure revealed significant correlations between the Boytim overall rating and each of the criteria in the RRDI. Because ratings on each of the seven RRDI criteria were significantly correlated to Boytim's rating, this indicates that the RRDI is a valid instrument with which to assign difficulty ratings to repertoire.

Examination of the intercorrelations yielded significant relationships between all but two pairings. Because all seven criteria of the RRDI are present in

any piece of vocal music, these positive significant relationships are not unusual. Further, this does not mean that fewer criteria should be assessed or that the criteria of the RRDI should be combined to determine the difficulty of repertoire. Each of the seven criteria in the RRDI provides valuable information about repertoire that can only serve to enhance the matching of repertoire to students' capabilities. The reported significant correlation coefficients also indicate an positive relationship between the overall Boytim rating. Therefore, these correlations contribute to the conclusion that the RRDI is a valuable and statistically valid instrument to use when grading repertoire.

Interjudge reliability estimates were calculated to test the RRDI for consistency. The Hoyt analysis of variance technique, employed to obtain interjudge reliability estimates, yielded very high coefficients for each of the seven criteria. All criteria received reliability coefficients of .950 or higher. This indicates that the RRDI is a highly reliable instrument to grade the difficulty of vocal solo repertoire.

Comparisons between more experienced and less experienced teachers' use of the RRDI were also calculated through analyses of variance. Results indicated no significant differences between the two experience levels for each of the seven criteria of the RRDI. The voice teachers' level of experience had no significant effect on their use of the RRDI for each of the seven criteria. Therefore, the RRDI can be used with consistent results by voice teachers of varying years of experience. This also indicates that the RRDI is a potentially valuable instrument for matching repertoire difficulty to students' capabilities for all people who teach voice.

These analyses of variance also provided results related to the validity issue of the ability of the RRDI to discriminate among songs by categorizing repertoire into different difficulty levels for each of the seven characteristics. For each of the seven criteria of the RRDI, the difficulty of the five songs was rated at different levels. In addition, in their ratings, the subjects independently agreed on the difficulty ratings of the five songs for all seven criteria in the RRDI. Thus, these analyses indicate

that the RRDI is a valid instrument that places songs in appropriate categories according to difficulty.

One of the arguments supporting the need for this study is that an overall rating system such as Boytim's has no established written criteria for grading difficulty and provides no objective method for determining why repertoire is graded as easy or difficult. The RRDI provides both. By giving repertoire a difficulty rating on seven technical characteristics of the music, an appropriate match can be made between song difficulty and the capabilities of students.

However, the importance of Boytim's rating system is not to be ignored. Although the agreements between Boytim's overall rating of each song and the RRDI ratings were not compared individually, the results of this study indicate that the RRDI does not contradict the Boytim ratings, but adds to the reason for the difficulty rating assigned to each piece. Therefore, the RRDI enhances the identification of difficulty by providing seven individual difficulty ratings on each piece of music. This is more advantageous for appropriately matching any vocal repertoire to students' capabilities.

Analyses of variance also were used to examine the interactions between the experience level of the teachers and the difficulty ratings of the repertoire. While no significant interactions were found among the experience levels and the ratings of difficulty for Range, Tessitura, Phrase, Melodic Line, Harmonic Foundations and Pronunciation, a significant interaction was found for Rhythm. This interaction may be the result of a misunderstanding or lack of clarity of the description for Rhythm for the three levels of difficulty. The definition for the difficulty levels for Rhythm were:

Easy Rhythm is uncomplicated and symmetrical.

Moderate Rhythm has moderate complexity (alternating meters).

Difficult Rhythm is complex (compound meters, alternating meters).

Since the "moderate" and "difficult" definitions were directed toward meter changes and neglected to address complicated rhythmic patterns without meter changes, the subjects may have interpreted this to mean that only repertoire with meter changes should be categorized as "moderate" or "difficult." Future

administrations of the RRDI will include clearer definitions for these difficulty levels.

Another possible answer for the presence of an interaction between experience level and rhythmic difficulty ratings for the songs is that some of the subjects' ratings may have been based on preconceptions or prior knowledge of the pieces rather than referring to the definitions provided in the RRDI.

Whatever the reason for this significant interaction for Rhythm, it does not put the value of the RRDI in jeopardy. With the non-significant interaction of the other six criteria, the RRDI still maintains a high degree of accuracy for assigning difficulty ratings to repertoire when used by voice teachers of all experience levels.

Since significant differences were found among the ratings of songs across difficulty levels for all seven criteria of the RRDI, a Tukey's comparison was calculated for each criterion. Analysis of data showed significant differences between all pair-wise comparisons of all songs for Range, Rhythm, Melodic Line and Harmonic Foundations. However, data for Tessitura revealed differences between all comparisons

except between Song 2 and Song 4. This could be explained because the difficulty of Song 2 and Song 4 are rated similarly by Boytim.

The results of Tukey's comparison calculations for Phrase did not show significant differences between all pairs. Results revealed no difference between Song 3 and Song 5. Here again, Boytim rated the difficulty of these two songs similarly. The fact that no differences were found between Song 3 and Song 4; and Song 4 and song 5 may be due to their placement in the RRDI, the length of the songs themselves or that in terms of phrases, they are similar. Likewise, the lack of significant differences for Pronunciation between Song 3 and Song 4; and Song 4 and Song 5 may be for the same reasons as those reported for Phrase.

Results of Tukey's honestly significant differences analyses calculated for all criteria show where the RRDI recorded pair-wise differences. Some of these agree with the Boytim overall ratings and some do not. While Boytim does not provide written criteria on how the overall ratings were assigned and provides only one general rating, the RRDI is more specific and can be of more use to voice teachers. However, the

similarities between the Boytim ratings and the RRDI ratings help to establish the validity of the RRDI.

RRDI Comments

Four subjects wrote comments on the RRDI. Three had comments that explained or justified some of the ratings they gave on the RRDI.

One subject commented on the wording of the RRDI. She said the phrase "with regard to" in the RRDI's definition of Pronunciation could be made clearer. The subject said "This seems awkward to me. Would 'with respect to' or 'as to' be clearer?" While this subject's suggestion may make the definitions for Pronunciation less awkward, no other subject voiced the same concern. Also, this subject did complete the RRDI, rating Pronunciation for all five songs. Therefore, the definition was not so confusing that it prevented the subject from completing the RRDI. However, future administrations of the RRDI may incorporate the alternate wording for Pronunciation.

All three subjects who explained or justified their ratings on the RRDI commented on Tessitura. One subject rated the difficulty of Tessitura on one of the songs as "5" on a scale of 1-9, but added the comment,

"not too high or low but remains in passagio (sic)." While the rating "5" is moderate in difficulty, this subject's comment appeared to indicate that if the Tessitura did not lie in the passaggio, an easier or different difficulty rating would have been assigned. Two other subjects made similar comments. Future administrations of the RRDI may address the passaggio in the definition of tessitura. Here again, the concerns expressed did not prevent the subjects from completing the RRDI. However, the subjects' comments were noted for future revisions of the instrument.

Observations

Close examination of the ratings on the RRDI revealed an interesting pattern. Although statistical analysis showed no difference between the two levels of experience for all seven criteria, subjects with the higher experience level tended to rate all criteria the same for each piece. That is, for Caro mio ben, 70 percent of all subjects in the higher experience level gave the difficulty rating of "1" on a scale of 1-9 to all seven criteria. Likewise, Il Neige was given a difficulty rating of "4" on a scale of 1-9 for all

seven criteria by 64 percent of all the subjects in the higher experience level.

Perhaps this can be explained by comparing these subjects' ratings with Boytim's overall global rating. Caro mio ben is rated "I" or easy by Boytim, thus a "1" rating for all criteria in the RRDI would be consistent. Boytim rates Il Neige as being "II" or moderate in difficulty. A rating of 4 out of 9 on all characteristics of the RRDI also represents a moderate level of difficulty.

Another explanation for this pattern could be the subjects' familiarity with Caro Mio Ben and Il Neige. Caro Mio Ben is standard repertoire for singers studying Italian diction. This song is generally sung by beginning singers and singers with relatively little singing experience. Perhaps, based on their familiarity with this piece, the more experienced voice teachers neglected to use the definitions for the difficulty levels in the RRDI and rated all seven characteristics as "1" or easy. The same reason could hold true for Il Neige. Although this song is in French and is not as widely used as Caro Mio Ben, it is included in several beginning singers' repertoire collections.

Although a pattern of responses from the group with the higher level of experience does exist, it is not substantial enough to be statistically significant. However, this pattern could account for some of the variance in the ratings between songs and experience level. Overall examination of the responses from the lower level of experienced teachers does not reveal any similar trends or patterns.

Discussion

Up until now, the process of choosing literature has been left to the subjective judgment of voice teachers. Systems to assess the difficulty of repertoire have been limited to a general overall difficulty rating. With the development of a valid and reliable measure such as the RRDI, the focus of repertoire selection can now be the matching of singers' capabilities to each of the technical characteristics of the songs.

The matching of singers' capabilities to the technical characteristics of vocal solos helps singers as well as voice teachers. By making an appropriate match, singers can avoid frustration and misclassification when given music that is too

difficult, and teachers can focus on helping students to build correct technique by choosing music within the students' capabilities (Saville, 1991).

The importance of the repertoire resources in existence, graded and ungraded, is not to be underestimated. They are adequate references for vocal solos. The ungraded lists by Coffin, Espina, and Kagen are excellent lists of repertoire. They list short descriptions of song content and publisher information. However, they fall short when looking for additional information with which to match the specific characteristics of the song to singers' capabilities.

The development of the RRDI does not render the existing graded repertoire lists useless. They are still valuable references and should not be disregarded. An overall global rating may be a starting point for voice teachers when identifying literature for their singers. However, closer scrutiny is warranted before an adequate match between repertoire and students' capabilities can be made. The RRDI goes beyond the global rating by providing seven individual difficulty ratings which should be considered when making a repertoire decision.

Hu's (1991) and Jones' (1985) contributions to this research are enormous. They realized the importance of matching repertoire to the capabilities of singers by developing grading criteria exclusively for the repertoire by Krenek and Respighi, respectively. Their identification and definitions of technical characteristics that should be used to grade the difficulty of vocal repertoire provided a basis for this project. They also provided evidence that the difficulty of vocal repertoire could be rated objectively.

High reliability coefficients for all seven criteria of the RRDI provide additional evidence that vocal difficulty can be assessed objectively. This study also showed that the RRDI can be used by all voice teachers, regardless of experience level. Further, scores for each of the seven criteria are significantly correlated to an overall global difficulty rating. The advantage of the RRDI is that it provides a more extensive difficulty grading system with which to match repertoire to students' capabilities than the current overall difficulty grading system.

This study's greatest value for music education lies in its ability to help voice teachers make an adequate match between students' capabilities and the difficulty of repertoire. Repertoire decisions generally have been based on the subjective judgment of voice teachers and on their familiarity with the repertoire. Thus, the use of an objective measure to help make repertoire decisions can be of great assistance.

The RRDI provides two tools for voice teachers. One is the definition of a set of seven technical characteristics that contribute toward the difficulty of repertoire. The second tool is a method of rating these characteristics according to their difficulty. When used together, these tools allow voice teachers to evaluate pieces of music objectively and match them to their students' capabilities.

Of course, the RRDI does not remove all subjectivity from the process of choosing repertoire because teachers still must subjectively judge their students' skills. The RRDI, however, is a major step in making the process of repertoire matching less susceptible to error and can help prevent the mismatching of repertoire to students' capabilities.

Voice teachers, then, may spend more time working with their students to build correct technique and less time trying to overcome the difficulties students have with music that is beyond the skills they possess.

Recommendations

Results of this study establish the validity and reliability of the RRDI, an instrument to grade the difficulty of vocal solo repertoire. The development of the RRDI has provided a stepping stone for additional research in the area of assessing the difficulty of repertoire and the matching of literature to students' capabilities. Future studies could focus on the following recommendations.

Increasing the number of subjects who use the RRDI may enhance the validity and reliability of the RRDI. The population for this study was limited to university and college instructors, listed in the CMS directory, whose primary instructional responsibility was teaching voice. Enlarging the population to encompass anyone who may teach voice in any capacity should ensure the reliability and validity of the RRDI. By using a larger population, more people would become aware of how to assess the difficulty of repertoire and be more

conscious of the importance of matching technical characteristics of repertoire to students' capabilities.

Changing the rating scale (1-9) to a scale with fewer numbers (1-6) would make the rating of the criteria easier and more comparable to the Boytim rating of I, II, or III. Those individuals who currently use the Boytim repertoire list may not feel that a larger scale for rating difficulty is warranted. By changing the RRDI scale to 1-6, comparison between Boytim's rating and the RRDI's ratings could be made easier. This would also reduce some of the variance in ratings recorded in this study when a comparison between Boytim and the RRDI was made.

Future investigation should focus on the development of a scale with which to grade students' capabilities so an appropriate match between students and repertoire could be made. The first step in matching repertoire to students' capabilities has been tested in this study. By developing a scale or measurement instrument to assess students' capabilities, the entire process of repertoire selection could be more beneficial to students and

teachers. Simply matching the ratings of the students' capabilities to the ratings of repertoire could be done quickly and easily.

Future investigation should focus on using the RRDI to rate additional repertoire. These ratings could be incorporated into a database containing the RRDI ratings for a large number of songs. This study was based on the ratings of five randomly selected songs. By rating additional songs and placing their ratings in a database computer program, voice teachers could enlarge their repertoire base and could have difficulty ratings and pertinent information about a large number of songs on hand for easy reference. This could make repertoire selection easier and could help voice teachers and students become aware of a variety of literature, rather than relying on familiar and perhaps over-used songs.

Future investigation could include a follow-up study to assess studio teachers' use of the RRDI and its effectiveness. The RRDI is designed to facilitate the matching of repertoire to students' capabilities. Examining studio voice teachers' use of the RRDI in this matching process can be of great value to further

establish the worth and need for the RRDI and to stress the importance of appropriate repertoire selection.

Choosing appropriate repertoire is one of the most important decisions voice teachers have to make. By individualizing the matching of repertoire to each students' particular capabilities, this process of selecting songs can become more precise and accurate. By using the RRDI, voice teachers of all experience levels can feel confident that their repertoire decisions are being made based on valid and reliable criteria. The more precision with which repertoire is matched to students' needs and capabilities, the more likely it is that singers will benefit in their vocal development.

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APPENDIX A

Ralston Repertoire Difficulty Index - Pilot

No. _____

Years of Experience as Private Studio Voice Teacher

_____ Yrs.

THE RALSTON SOLO REPERTOIRE TEST

Please read the following definitions for range, tessitura, rhythm, phrasing, melodic line and harmonic foundations carefully. Notice they are divided into three levels of difficulty, i.e., easy, moderate, difficult, with specific criteria listed for each level. After careful perusal of the definitions, examine each vocal solo and rate each variable for each solo.

Definitions

EASY

1. Range is limited to a major tenth.
2. Tessitura lies well within the comfortable range for high soprano.
3. Rhythm is uncomplicated and symmetrical.
4. Phrases are short (2-3 measures).
5. Melodic line is simple, diatonic with conjunct intervals and syllabic.
6. Harmonic foundations include triadic accompaniment with few dissonances.

MODERATE

1. Range is up to two octaves with moderate register changes.
2. Tessitura is moderately high or low but reasonable for high soprano.
3. Rhythm has moderate complexity (alternating meters).
4. Phrases are up to 3-5 measures long.
5. Melodic line may include disjunct and difficult intervals.
6. Harmonic foundations include consonant to moderately dissonant accompaniment that may or may not be related to the voice part.

DIFFICULT

1. Range is extended beyond two octaves with difficult register changes.
2. Tessitura is high or low and may be difficult to sustain.
3. Rhythm is complex (compound meters, alternating meters).
4. Phrases are long and require strong breath control.
5. Melodic line is chromatic with leaps of more than an octave.
6. Harmonic foundations include dissonance and clear delineation between melody and accompaniment.

List any additional musical characteristics you feel would contribute to the difficulty rating of vocal repertoire.

1.

2.

3.

4.

etc.

1. Caro Mio Ben - Giordani

	EASY			MODERATE			DIFFICULT		
Range	1	2	3	4	5	6	7	8	9
Tessitura	1	2	3	4	5	6	7	8	9
Rhythm	1	2	3	4	5	6	7	8	9
Phrasing	1	2	3	4	5	6	7	8	9
Melodic Line	1	2	3	4	5	6	7	8	9
Harmonic Foundations	1	2	3	4	5	6	7	8	9

---

2. Come and Trip It - Handel/Carmichael

	EASY			MODERATE			DIFFICULT		
Range	1	2	3	4	5	6	7	8	9
Tessitura	1	2	3	4	5	6	7	8	9
Rhythm	1	2	3	4	5	6	7	8	9
Phrasing	1	2	3	4	5	6	7	8	9
Melodic Line	1	2	3	4	5	6	7	8	9
Harmonic Foundations	1	2	3	4	5	6	7	8	9

3. Tell Me, Oh, Blue, Blue Sky - Giannini, V.

	EASY			MODERATE				DIFFICULT	
Range	1	2	3	4	5	6	7	8	9
Tessitura	1	2	3	4	5	6	7	8	9
Rhythm	1	2	3	4	5	6	7	8	9
Phrasing	1	2	3	4	5	6	7	8	9
Melodic Line	1	2	3	4	5	6	7	8	9
Harmonic Foundations	1	2	3	4	5	6	7	8	9

---

4. Tis Snowing (Il Neige) - Bemberg, H.

	EASY			MODERATE				DIFFICULT	
Range	1	2	3	4	5	6	7	8	9
Tessitura	1	2	3	4	5	6	7	8	9
Rhythm	1	2	3	4	5	6	7	8	9
Phrasing	1	2	3	4	5	6	7	8	9
Melodic Line	1	2	3	4	5	6	7	8	9
Harmonic Foundations	1	2	3	4	5	6	7	8	9

5. The Water Mill - Vaughn Williams, R.

	EASY			MODERATE			DIFFICULT		
Range	1	2	3	4	5	6	7	8	9
	EASY			MODERATE			DIFFICULT		
Tessitura	1	2	3	4	5	6	7	8	9
	EASY			MODERATE			DIFFICULT		
Rhythm	1	2	3	4	5	6	7	8	9
	EASY			MODERATE			DIFFICULT		
Phrasing	1	2	3	4	5	6	7	8	9
	EASY			MODERATE			DIFFICULT		
Melodic Line	1	2	3	4	5	6	7	8	9
	EASY			MODERATE			DIFFICULT		
Harmonic Foundations	1	2	3	4	5	6	7	8	9

APPENDIX B

Final Ralston Repertoire Difficulty Index

With Music

No. _____

Years of Experience as Private Studio Voice Teacher

_____ Yrs.

THE RALSTON SOLO REPERTOIRE TEST

Please read the following definitions for range, tessitura, rhythm, phrasing, melodic line, harmonic foundations and pronunciation of consonants and vowels carefully. Notice they are divided into three levels of difficulty, i.e., easy, moderate, difficult, with specific criteria listed for each level. After careful perusal of the definitions, examine each vocal solo in its original language and rate each variable for each solo.

Definitions

RANGE

Easy	Range is limited to a major tenth.
Moderate	Range is up to one octave plus a fifth with moderate register changes.
Difficult	Range is extended to two octaves and beyond with difficult register changes.

TESSITURA

Easy	Tessitura lies well within the comfortable range for high soprano.
Moderate	Tessitura is moderately high or low but reasonable for high soprano.
Difficult	Tessitura is high or low and may be difficult to sustain.

RHYTHM

Easy	Rhythm is uncomplicated and symmetrical.
Moderate	Rhythm has moderate complexity (alternating meters).
Difficult	Rhythm is complex (compound meters, alternating meters).

PHRASES

Easy	Phrases are short (2-3 measures).
Moderate	Phrases are up to 3-5 measures long.
Difficult	Phrases are long and require strong breath control.

MELODIC LINE

Easy	Melodic line is simple, diatonic with conjunct intervals and syllabic.
Moderate	Melodic line may include disjunct and difficult intervals and melismas of moderate length.
Difficult	Melodic line may include chromaticism, with leaps of more than an octave and extended melismas.

HARMONIC FOUNDATIONS

Easy	Harmonic foundations include triadic accompaniment with few dissonances.
Moderate	Harmonic foundations include consonant to moderately dissonant accompaniment that may or may not be related to the voice part.
Difficult	Harmonic foundations include dissonance and clear delineation between melody and accompaniment.

PRONUNCIATION

Easy	Pronunciation of consonants and vowels, individually or in combination, is relatively simple with regard to tempo, vocal placement and repetition.
Moderate	Pronunciation of consonants and vowels, individually or in combination, is moderately complex with regard to tempo, vocal placement and repetition.
Difficult	Pronunciation of consonants and vowels, individually or in combination, is difficult with regard to tempo, vocal placement and repetition.

1. Caro Mio Ben - Giordani ***(Italian)***

	EASY			MODERATE				DIFFICULT
Range	1	2	3	4	5	6	7	8	9
Tessitura	1	2	3	4	5	6	7	8	9
Rhythm	1	2	3	4	5	6	7	8	9
Phrasing	1	2	3	4	5	6	7	8	9
Melodic Line	1	2	3	4	5	6	7	8	9
Harmonic Foundations	1	2	3	4	5	6	7	8	9

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2. Come and Trip It - Handel/Arr. Carmichael ***(English)***

	EASY			MODERATE				DIFFICULT
Range	1	2	3	4	5	6	7	8	9
Tessitura	1	2	3	4	5	6	7	8	9
Rhythm	1	2	3	4	5	6	7	8	9
Phrasing	1	2	3	4	5	6	7	8	9
Melodic Line	1	2	3	4	5	6	7	8	9
Harmonic Foundations	1	2	3	4	5	6	7	8	9

3. Tell Me, Oh, Blue, Blue Sky - Giannini, V. ***(English)***

	EASY			MODERATE				DIFFICULT
Range	1	2	3	4	5	6	7	8	9
Tessitura	1	2	3	4	5	6	7	8	9
Rhythm	1	2	3	4	5	6	7	8	9
Phrasing	1	2	3	4	5	6	7	8	9
Melodic Line	1	2	3	4	5	6	7	8	9
Harmonic Foundations	1	2	3	4	5	6	7	8	9

---

4. Il Neige - Bemberg, H. ***(French)***

	EASY			MODERATE				DIFFICULT
Range	1	2	3	4	5	6	7	8	9
Tessitura	1	2	3	4	5	6	7	8	9
Rhythm	1	2	3	4	5	6	7	8	9
Phrasing	1	2	3	4	5	6	7	8	9
Melodic Line	1	2	3	4	5	6	7	8	9
Harmonic Foundations	1	2	3	4	5	6	7	8	9

5. The Water Mill - Vaughn Williams, R. *(English)*

	EASY			MODERATE			DIFFICULT		
Range	1	2	3	4	5	6	7	8	9
	EASY			MODERATE			DIFFICULT		
Tessitura	1	2	3	4	5	6	7	8	9
	EASY			MODERATE			DIFFICULT		
Rhythm	1	2	3	4	5	6	7	8	9
	EASY			MODERATE			DIFFICULT		
Phrasing	1	2	3	4	5	6	7	8	9
	EASY			MODERATE			DIFFICULT		
Melodic Line	1	2	3	4	5	6	7	8	9
	EASY			MODERATE			DIFFICULT		
Harmonic Foundations	1	2	3	4	5	6	7	8	9

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Pages 109-110

Caro mio ben (Thou, all my bliss). Arietta.
Giuseppe Giordani ; English version by Theodore Baker.
Copyright 1891, copyright renewed 1922.
In: Twenty-four Italian songs and arias. G. Schirmer, Inc.

Pages 111-113

Come and trip it (from L'Allegro)
George Frederic Handel ; arranged by Mary Carmichael.
In: The first book of soprano solos, part II. G. Schirmer, Inc.

Pages 114-115

Tell me, oh blue, blue sky.
Poem by Karl Flaster ; music by Vittorio Giannini.
Copyright 1927.
Warner Bros. Publications.

Pages 116-118

Il Neige ('Tis snowing).
Words and music by H. Bemberg ; English version by R.H. Elkin.
R8026.
Carl Fischer.

Pages 119-122

The water mill
Text from Four poems by Fredegond Shove ; music by R. Vaughan Williams.
Copyright 1925.
Oxford University Press.

APPENDIX C

Discrimination Among Songs

Discrimination Among Songs for Range

		Songs				
		1	**2**	**3**	**4**	**5**
	1	2	2	5	4	3
	2	3	3	5	2	2
RATERS	**3**	1	1	5	3	1
	4	2	3	6	4	2
	5	2	2	4	3	3
	6	1	2	4	2	1

$(4, N = 6) = 14.325, \quad p<.05$

Discrimination Among Songs for Tessitura

		Songs				
		1	**2**	**3**	**4**	**5**
	1	2	2	6	4	3
	2	3	2	6	4	2
RATERS	**3**	1	1	4	3	1
	4	2	2	6	4	3
	5	3	2	5	2	3
	6	1	1	4	3	2

$(4, N = 6) = 17.793, \quad p<.05$

Discrimination Among Songs for Rhythm

		Songs				
		1	**2**	**3**	**4**	**5**
RATERS	**1**	3	3	5	3	7
	2	2	6	3	3	7
	3	2	3	6	3	6
	4	2	3	5	4	5
	5	1	2	3	2	5
	6	2	2	5	2	4

$(4, N = 6) = 18.195, \quad p<.05$

Discrimination Among Songs for Phrase

		Songs				
		1	**2**	**3**	**4**	**5**
RATERS	**1**	2	5	7	3	8
	2	6	6	5	4	5
	3	2	2	5	4	5
	4	2	2	4	5	6
	5	2	4	5	4	5
	6	1	3	3	3	4

$(4, N = 6) = 10.657, \quad p<.05$

Discrimination Among Songs for Melodic Line

		Songs				
		1	**2**	**3**	**4**	**5**
	1	2	4	6	5	7
	2	2	4	6	6	7
RATERS	**3**	3	3	5	5	6
	4	2	3	5	5	6
	5	3	4	5	5	6
	6	2	4	5	5	5

$(4, N = 6) = 14.325, \quad p<.05$

Discrimination Among Songs for Harmonic Foundations

		Songs				
		1	**2**	**3**	**4**	**5**
	1	2	2	5	3	5
	2	2	2	4	4	7
RATERS	**3**	2	3	5	4	7
	4	2	3	6	4	6
	5	1	2	5	3	6
	6	1	1	5	3	6

$(4, N = 6) = 22.650, \quad p<.05$

Discrimination Among Songs for Pronunciation

		Songs				
		1	**2**	**3**	**4**	**5**
RATERS	**1**	3	4	5	7	6
	2	2	4	5	7	7
	3	3	3	5	6	6
	4	2	3	4	6	6
	5	3	3	4	6	6
	6	2	2	3	7	6

$(4, N = 6) = 14.325, \quad p<.05$

APPENDIX D

Interjudge Reliability - Pilot Study

Interjudge Reliability - Pilot Study

Range

Source	df	Sum of Squares	Mean Square
Judge	5	7.76666667	1.55333333
Song	4	36.86666667	9.21666667
Judge*Song	20	8.73333333	0.43666667

Tessitura

Source	df	Sum of Squares	Mean Square
Judge	5	7.36666667	1.47333333
Song	4	46.13333333	11.53333333
Judge*Song	20	7.46666667	0.37333333

Rhythm

Source	df	Sum of Squares	Mean Square
Judge	5	11.36666667	2.27333333
Song	4	50.46666667	12.61666667
Judge*Song	20	19.13333333	0.95666667

Phrase

Source	df	Sum of Squares	Mean Square
Judge	5	2.16666667	0.43333333
Song	4	63.00000000	15.75000000
Judge*Song	20	11.00000000	0.55000000

Melodic Line

Source	df	Sum of Squares	Mean Square
Judge	5	4.30000000	0.86000000
Song	4	64.20000000	16.05000000
Judge*Song	20	12.20000000	0.61000000

Harmonic Foundations

Source	df	Sum of Squares	Mean Square
Judge	5	4.70000000	0.94000000
Song	4	85.80000000	21.45000000
Judge*Song	20	5.80000000	0.29000000

APPENDIX E

Interjudge Reliability - Re-Pilot Study

Interjudge Reliability - Re-Pilot

Melodic Line

Source	df	Sum of Squares	Mean Square
Judge	5	2.66666667	0.53333333
Song	4	55.80000000	13.95000000
Judge*Song	20	5.00000000	0.25000000

Pronunciation

Source	df	Sum of Squares	Mean Square
Judge	5	4.26666667	0.85333333
Song	4	75.46666667	18.86666667
Judge*Song	20	5.73333333	0.28666667

APPENDIX F

First Letter to Subjects

UNIVERSITY OF MISSOURI-COLUMBIA

College of Arts and Science

Department of Music

138 Fine Arts Building
Columbia, Missouri 65211
Telephone: (314) 882-2604
FAX: (314) 884=4744

Sept. 10, 1995

Name
School
Address
City, State Zip Code
Country

Dear (Name):

I am a doctoral student in music education collecting information for my dissertation and hope you will be willing to assist me. I am working to develop a valid and reliable measurement instrument to assess the difficulty of vocal solo repertoire. The process necessitates asking university voice professors around the country to serve as experts by reviewing scores of vocal solos and rating their difficulty in several categories according to a set of criteria I have defined. Based on your position as a college or university voice teacher, you have been selected to participate.

If you would be willing to take 15-20 minutes to help with this project, please fill out the enclosed postcard and return it to me as soon as possible, and no later than September 25. I may also be contacted by e-mail (C614503@Mizzou1.missouri.edu) or (816) 665-9433. A packet of materials will be forwarded to you soon after I receive your response.

Please consider participating in this study. All participants will remain anonymous and all results will be confidential. Also, if you would like a copy of the results, I would be glad to send this information to you when my research is complete.

Thank you in advance,

Janette Ralston

Janette Ralston
Doctoral Candidate
in Music Education

Self-addressed, stamped envelope for subjects willingness to participate in study.

Please indicate your willingness to participate in the study described in the attached letter. Please check the appropriate box and return no later than Sept. 25, 1995. Thank you.

☐ YES, I am willing to be a participant in your study.

☐ I am sorry I cannot participate in your study at this time.

APPENDIX G

Second Letter to Subjects

UNIVERSITY OF MISSOURI-COLUMBIA

College of Arts and Science

Department of Music

138 Fine Arts Building
Columbia, Missouri 65211
Telephone: (314) 882-2604
FAX: (314) 884=4744

Oct. 9, 1995

Name
School
Address
City, State Zip Code

Second Mailing

Dear (Name) :

I need your help. If you have already responded to my first letter, thank you for your prompt response and ignore the rest of this letter. If my first letter has been misplaced or gotten lost in the shuffle of paperwork, please respond to this plea for help.

I understand that you are extremely busy at this time of the school year, but won't you please take the time to participate in my study? I am a doctoral student in music education collecting information for my dissertation and hope you will be willing to assist me. I am working to develop a valid and reliable measurement instrument to assess the difficulty of vocal solo repertoire. The process necessitates asking university voice professors around the country to serve as experts by reviewing scores of vocal solos and rating their difficulty in several categories according to a set of criteria I have defined. Based on your position as a college or university voice teacher, you have been selected to participate.

If you would be willing to take 15-20 minutes to help with this project, please fill out the enclosed postcard and return it to me as soon as possible, and no later than October 31. Even if you decline to participate, PLEASE return the enclosed postcard with the appropriate box checked so I can complete my records. I may also be contacted by e-mail (C614503@Mizzou1.missouri.edu) or (816) 665-9433. A packet of materials will be forwarded to you soon after I receive your response.

Please consider participating in this study. All participants will remain anonymous and all results will be confidential. Also, if you would like a copy of the results, I would be glad to send this information to you when my research is complete.

Thank you in advance,

Janette Ralston

Janette Ralston
Doctoral Candidate
in Music Education

APPENDIX H

Third Letter to Subjects

UNIVERSITY OF MISSOURI-COLUMBIA

College of Arts and Science

Department of Music

138 Fine Arts Building
Columbia, Missouri 65211
Telephone: (314) 882-2604
FAX: (314) 884=4744

Nov. 3, 1995

Name
School
Address
City, State Zip Code

Third Mailing

Dear (Name) :

I need your help. If you have already responded to my first or second letter, your help is greatly appreciated. If my letters have been forgotten or have been buried on your desk, I understand. But won't you please take a moment to consider participating in my study and indicate your choice on the enclosed self-addressed, stamped postcard and mail the card back to me?

I understand that you are extremely busy at this time of the school year, but won't you please take the time to participate in my study? I am a doctoral student in music education collecting information for my dissertation and hope you will be willing to assist me. I am working to develop a valid and reliable measurement instrument to assess the difficulty of vocal solo repertoire. The process necessitates asking university voice professors around the country to serve as experts by reviewing scores of vocal solos and rating their difficulty in several categories according to a set of criteria I have defined. Based on your position as a college or university voice teacher, you have been selected to participate.

If you would be willing to take 15-20 minutes to help with this project, please fill out the enclosed postcard and return it to me as soon as possible, and no later than November 24. Even if you decline to participate, PLEASE return the enclosed postcard with the appropriate box checked so I can complete my records. I may also be contacted by e-mail (C614503@Mizzou1.missouri.edu) or (816) 665-9433. A packet of materials will be forwarded to you soon after I receive your response.

Please consider participating in this study. All participants will remain anonymous and all results will be confidential. Also, if you would like a copy of the results, I would be glad to send this information to you when my research is complete.

Thank you ~~in~~ advance,

Janette Ralston

Janette Ralston
Doctoral Candidate
in Music Education

APPENDIX I

First Reminder Letter

UNIVERSITY OF MISSOURI-COLUMBIA

College of Arts and Science

Department of Music

138 Fine Arts Building
Columbia, Missouri 65211
Telephone: (314) 882-2604
FAX: (314) 884=4744

Nov. 20, 1995

Name
School
Address
City, State Zip Code 1st Reminder

Dear (Name):

Have you forgotten me?

If you have already responded to my other mailings, thank you immensely. If my letters have been forgotten or have been buried on your desk, I understand. Your time is very valuable. But won't you please take a moment to complete the Index and return it to me as soon as possible?

The results of my study are contingent on your response. So please find the time to finish the Index. If you need another copy of the Ralston Repertoire Difficulty Index, I will be glad to mail you another copy. I can be contacted by e-mail (C614503@Mizzou1.missouri.edu) or (816) 665-9433 anytime, night or day.

Thank you in advance,

Janette Ralston
Doctoral Candidate
in Music Education

APPENDIX J

Second Reminder Letter

UNIVERSITY OF MISSOURI-COLUMBIA

College of Arts and Science

Department of Music

138 Fine Arts Building
Columbia, Missouri 65211
Telephone: (314) 882-2604
FAX: (314) 884=4744

Dec. 11, 1995

Name
School
Address
City, State Zip Code

2nd Reminder

Dear (Name):

It's not too late!

I desperately need your help. I am trying to conclude my data gathering and I have not received your responses to the Ralston Repertoire Difficulty Index.

If you have already responded to my other mailings, thank you immensely. If my letters have been forgotten or have been buried on your desk, I understand. Your time is very valuable. But won't you please take a moment to complete the Index and return it to me as soon as possible?

The results of my study are contingent on your response. So please find the time to finish the Index. If you need another copy of the Ralston Repertoire Difficulty Index, I will be glad to mail you another copy. I can be contacted by e-mail (C614503@Mizzou1.missouri.edu) or (816) 665-9433 anytime, night or day.

Thank you in advance,

Janette Ralston

Janette Ralston
Doctoral Candidate
in Music Education

APPENDIX L

Photocopy Permission Letters to Publishers

UNIVERSITY OF MISSOURI-COLUMBIA

College of Arts and Science

Department of Music

138 Fine Arts
Columbia, Missouri 65211
Telephone (314) 882-2604

June 16, 1995

Warner Bros. Publications
15800 NW 48th Ave.
Miami, FL 33014
ATTN: Copyright

To Whom It May Concern:

I am a doctoral student in music education collecting information for my dissertation. I am working to develop a valid and reliable measurement instrument to assess the difficulty of vocal solo repertoire. The process necessitates asking university voice professors around the country to serve as experts by reviewing scores of vocal solos and rating their difficulty in several categories according to a set of criteria I have defined. I have enclosed a copy of the measurement instrument for you perusal.

The repertoire for this project was chosen by cross-referencing three repertoire lists (i.e.: Music for the Voice, Sergius Kagen; Singer's Repertoire, Berton Coffin; Repertoire for the Solo Voice, Noni Espina). Five of the solos that appeared on all three lists were then randomly selected. "Tell Me, Oh Blue, Blue Sky" by Vittorio Giannini, published by your company was chosen as one of the pieces to be included in this study.

Since this project involves five different songs, the cost of purchasing 50 individual scores of each would be enormous, particularly on a graduate student budget. I am writing to request permission to make a total of 50 photocopies of the vocal solo "Tell Me, Oh Blue, Blue Sky" by Vittorio Giannini to be used in this project. The song will be reduced approximately 60% and will be photocopied with two reduced pages per one photocopied page, run front and back. Your copyright notice will appear on each copy, with the addition of the statement "Used by Permission", or any other statement you may prefer.

I already own several copies of "Tell Me, Oh Blue, Blue Sky" which I have purchased for my own personal library. The duplicated materials will be destroyed upon completion of this study.

This study is scheduled to begin August 1, 1995, therefore your expedited response is sincerely appreciated. A self-addressed stamped envelope is included for your convenience. Feel free to contact me if further information is needed. Phone: (314) 474-8889 Address: 560 East Park Lane #B, Columbia, MO 65201. E-Mail: C614503@Mizzou1.missouri.edu.

Thank you in advance,

Janette Ralston
Doctoral Candidate
in Music Education

Dr. Wendy Sims
Director of Music Education
Dissertation Supervisor

UNIVERSITY OF MISSOURI-COLUMBIA

College of Arts and Science

Department of Music

138 Fine Arts
Columbia, Missouri 65211
Telephone (314) 882-2604

June 16, 1995

Carl Michaelson
Carl Fishcher, Inc.
62 Cooper Square
New York, NY 10003

Dear Mr. Michaelson:

I am a doctoral student in music education collecting information for my dissertation. I am working to develop a valid and reliable measurement instrument to assess the difficulty of vocal solo repertoire. The process necessitates asking university voice professors around the country to serve as experts by reviewing scores of vocal solos and rating their difficulty in several categories according to a set of criteria I have defined. I have enclosed a copy of the measurement instrument for you perusal.

The repertoire for this project was chosen by cross-referencing three repertoire lists (i.e.: Music for the Voice, Sergius Kagen; Singer's Repertoire, Berton Coffin; Repertoire for the Solo Voice, Noni Espina). Five of the solos that appeared on all three lists were then randomly selected. "Il Neige" by H. Bemberg, published by your company in the Standard Vocal Repertoire, Book Two, High Voice was chosen as one of the pieces to be included in this study.

Since this project involves five different songs, the cost of purchasing 50 individual scores of each would be enormous, particularly on a graduate student budget. I am writing to request permission to make a total of 50 photocopies of the vocal solo "Il Neige" by H. Bemberg to be used in this project. The song will be reduced approximately 60% and will be photocopied with two reduced pages per one photocopied page, run front and back. Your copyright notice will appear on each copy, with the addition of the statement "Used by Permission", or any other statement you may prefer.

I already own several copies of "Il Neige" which I have purchased for my own personal library. The duplicated materials will be destroyed upon completion of this study.

This study is scheduled to begin August 1, 1995, therefore your expedited response is sincerely appreciated. A self-addressed stamped envelope is included for your convenience. Feel free to contact me if further information is needed. Phone: (314) 474-8889 Address: 560 East Park Lane #B, Columbia, MO 65201. E-Mail: C614503@Mizzou1.missouri.edu.

Thank you in advance,

Janette Ralston
Doctoral Candidate
in Music Education

Dr. Wendy Sims
Director of Music Education
Dissertation Supervisor

UNIVERSITY OF MISSOURI-COLUMBIA

College of Arts and Science

Department of Music

138 Fine Arts
Columbia, Missouri 65211
Telephone (314) 882-2604

June 16, 1995, 1995

Brenda Kline
Hal Leonard
P.O. Box 13819
Milwaukee, Wisc. 53213

Dear Ms. Kline:

I am a doctoral student in music education collecting information for my dissertation. I am working to develop a valid and reliable measurement instrument to assess the difficulty of vocal solo repertoire. The process necessitates asking university voice professors around the country to serve as experts by reviewing scores of vocal solos and rating their difficulty in several categories according to a set of criteria I have defined. I have enclosed a copy of the measurement instrument for you perusal.

The repertoire for this project was chosen by cross-referencing three repertoire lists (i.e.: Music for the Voice, Sergius Kagen; Singer's Repertoire, Berton Coffin; Repertoire for the Solo Voice, Noni Espina). Five of the solos that appeared on all three lists were then randomly selected. "Caro mio ben" by Giuseppe Giordani, published by your company in Twenty-Four Italian Songs and Arias and "Come and Trip It" by George Frideric Handel, arranged by Mary Carmichael published by your company in The First Book of Soprano Solos, Part II were chosen as two of the pieces to be included in this study.

Since this project involves five different songs, the cost of purchasing 50 individual scores of each would be enormous, particularly on a graduate student budget. I am writing to request permission to make a total of 50 photocopies each of the vocal solos "Caro mio ben" by Giuseppe Giordani and "Come and Trip It" by George Frideric Handel, arranged by Mary Carmichael to be used in this project. The songs will be reduced approximately 60% and will be photocopied with two reduced pages per one photocopied page, run front and back. Your copyright notice will appear on each copy, with the addition of the statement "Used by Permission", or any other statement you may prefer.

I already own several copies of "Caro mio ben" and "Come and Trip It" which I have purchased for my own personal library. The duplicated materials will be destroyed upon completion of this study.

This study is scheduled to begin August 1, 1995, therefore your expedited response is sincerely appreciated. A self-addressed stamped envelope is included for your convenience. Feel free to contact me if further information is needed. Phone: (314) 474-8889 Address: 560 East Park Lane #B, Columbia, MO 65201. E-Mail: C614503@Mizzou1.missouri.edu.

Thank you in advance,

Janette Ralston
Doctoral Candidate
in Music Education

Dr. Wendy Sims
Director of Music Education
Dissertation Supervisor

UNIVERSITY OF MISSOURI-COLUMBIA

College of Arts and Science

Department of Music

138 Fine Arts
Columbia, Missouri 65211
Telephone (314) 882-2604

June 16, 1995, 1995

Susan Brailove
Music Dept
Oxford University Press
198 Madison Ave
New York, NY 10016

Dear Ms. Brailove:

I am a doctoral student in music education collecting information for my dissertation. I am working to develop a valid and reliable measurement instrument to assess the difficulty of vocal solo repertoire. The process necessitates asking university voice professors around the country to serve as experts by reviewing scores of vocal solos and rating their difficulty in several categories according to a set of criteria I have defined. I have enclosed a copy of the measurement instrument for you perusal.

The repertoire for this project was chosen by cross-referencing three repertoire lists (i.e.: Music for the Voice, Sergius Kagen; Singer's Repertoire, Berton Coffin; Repertoire for the Solo Voice, Noni Espina). Five of the solos that appeared on all three lists were then randomly selected. "The Water Mill" by R. Vaughan Williams, published by your company was chosen as one of the pieces to be included in this study.

Since this project involves five different songs, the cost of purchasing 50 individual scores of each would be enormous, particularly on a graduate student budget. I am writing to request permission to make a total of 50 photocopies of the vocal solo "The Water Mill" by R. Vaughan Williams to be used in this project. The song will be reduced approximately 60% and will be photocopied with two reduced pages per one photocopied page, run front and back. Your copyright notice will appear on each copy, with the addition of the statement "Used by Permission", or any other statement you may prefer.

I already own several copies of "The Water Mill" which I have purchased for my own personal library. The duplicated materials will be destroyed upon completion of this study.

This study is scheduled to begin August 1, 1995, therefore your expedited response is sincerely appreciated. A self-addressed stamped envelope is included for your convenience. Feel free to contact me if further information is needed. Phone: (314) 474-8889 Address: 560 East Park Lane #B, Columbia, MO 65201. E-Mail: C614503@Mizzou1.missouri.edu.

Thank you in advance,

Janette Ralston
Doctoral Candidate
in Music Education

Dr. Wendy Sims
Director of Music Education
Dissertation Supervisor

APPENDIX L

Photocopy Permission Letters from Publishers

UNIVERSITY OF MISSOURI-COLUMBIA

College of Arts and Science

Department of Music

138 Fine Arts
Columbia, Missouri 65211
Telephone (314) 882-2604

7-12-95

Permission granted for
50 Copies of each
Song
Please forward your payment
by check in amt. $25—
payable to G. Schirmer Inc
with a copy of this letter.

"Reprinted by permission of G. Schirmer, Inc."

June 16, 1995, 1995

Brenda Kline
Hal Leonard
P.O. Box 13819
Milwaukee, Wisc. 53213

G. Schirmer, Inc.
c/o MUSIC SALES CORP.
257 PARK AVENUE SOUTH
NEW YORK, NY 10010

Dear Ms. Kline:

I am a doctoral student in music education collecting information for my dissertation. I am working to develop a valid and reliable measurement instrument to assess the difficulty of vocal solo repertoire. The process necessitates asking university voice professors around the country to serve as experts by reviewing scores of vocal solos and rating their difficulty in several categories according to a set of criteria I have defined. I have enclosed a copy of the measurement instrument for you perusal.

The repertoire for this project was chosen by cross-referencing three repertoire lists (i.e.: Music for the Voice, Sergius Kagen; Singer's Repertoire, Berton Coffin; Repertoire for the Solo Voice, Noni Espina). Five of the solos that appeared on all three lists were then randomly selected. "Caro mio ben" by Giuseppe Giordani, published by your company in Twenty-Four Italian Songs and Arias and "Come and Trip It" by George Frideric Handel, arranged by Mary Carmichael published by your company in The First Book of Soprano Solos, Part II were chosen as two of the pieces to be included in this study.

Since this project involves five different songs, the cost of purchasing 50 individual scores of each would be enormous, particularly on a graduate student budget. I am writing to request permission to make a total of 50 photocopies each of the vocal solos "Caro mio ben" by Giuseppe Giordani and "Come and Trip It" by George Frideric Handel, arranged by Mary Carmichael to be used in this project. The songs will be reduced approximately 60% and will be photocopied with two reduced pages per one photocopied page, run front and back. Your copyright notice will appear on each copy, with the addition of the statement "Used by Permission", or any other statement you may prefer.

I already own several copies of "Caro mio ben" and "Come and Trip It" which I have purchased for my own personal library. The duplicated materials will be destroyed upon completion of this study.

This study is scheduled to begin August 1, 1995, therefore your expedited response is sincerely appreciated. A self-addressed stamped envelope is included for your convenience. Feel free to contact me if further information is needed. Phone: (314) 474-8889 Address: 560 East Park Lane #B, Columbia, MO 65201. E-Mail: C614503@Mizzou1.missouri.edu.

Thank you in advance,

Janette Ralston

Janette Ralston
Doctoral Candidate
in Music Education

Wendy Sims

Dr. Wendy Sims
Director of Music Education
Dissertation Supervisor

CARL FISCHER®
Music Publishers Since 1872

July 3, 1995

Ms. Janette Ralston
560 East Park Lane #B
Columbia, MO 65201

Dear Ms. Ralston:

Thank you for your letter of June 16th.

We hereby grant you permission to include Bemberg/Row - IL NEIGE in your dissertation as indicated in your letter.

Please include the correct copyright information in your dissertation:

Any distribution or sale of your project beyond the requirements of your university will require our additional permission.

With all best wishes,

Sincerely yours,

Carl Michaelson, Manager
Copyright & Royalty Dept.

CM/mf

Carl Fischer Inc., 62 Cooper Square, New York, NY 10003 212-777-0900 Fax: 212-477-4129

Warner Bros. Publications Inc.
A Warner Music Group Company

Miami • Los Angeles • New York • Seattle

July 6, 1995

Janette Ralston
University of Missouri-Columbia
College of Arts and Science
Department of Music
138 Fine Arts
Columbia, Missouri 65211

re: THE RALSTON REPERTOIRE DIFFICULTY INDEX

Dear Janette:

This letter serves as your permission to include TELL ME, OH BLUE, BLUE SKY within your dissertation, as shown above.

This permission is limited to the terms of your request dated June 16, 1995. When making your photocopies, the copyright notice needs to appear as shown along with the composer and arranger's name and write DUPLICATED BY PERMISSION OF WARNER BROS. PUBLICATIONS INC. on each copy. The copies will need to be destroyed upon completion of your study. This permission does not authorize the inclusion of the material in any other form, excluding microfilming, for distribution otherwise, free or for charge. It is understood by us that UNIVERSITY MICROFILMS, INC. may supply single copies on demand.

This permission is granted on a non-exclusive basis, and you shall afford all credits as they appear on the source material. The fee for this permission shall be waived.

Please acknowledge receipt and acceptance of the permission by affixing your signature in the space provided below. Please retain one copy, returning the second to this office.

Thank you for your interest in our publications. We wish you well with this project.

Sincerely,
WARNER BROS. PUBLICATIONS

Sonia Lee

Sonia Lee, Coordinator
Copyright Licensing

Received & Accepted:

by:_____
Janette Ralston

Oxford University Press

July 7, 1995

Ms. Janette Ralston
560 - East Park Lane #B
Columbia, MO 65201

Dear Ms. Ralston:

Thank you for your 16 June request for permission to make up to 50 photocopies of the Vaughan Williams WATER MILL for your dissertation research.

This letter brings with it our permission for you to make these copies. Please be sure

- That the copyright notice appears on all copies, followed by the phrase, "Reproduced by permission of the publisher";

- That the music is printed in the reduced form you describe in your letter;

- That all copies are returned to you and either kept by you only with your dissertation materials, or destroyed.

There will be no fee.

Sincerely,

Susan Brailove
Manager, Music Department

SAB:ac

198 Madison Avenue • New York, New York 10016-4314 • Telephone 212-726-6000

APPENDIX M

Cover Letter to Participants

UNIVERSITY OF MISSOURI-COLUMBIA

College of Arts and Science

Department of Music

138 Fine Arts Building
Columbia, Missouri 65211
Telephone: (314) 882-2604
FAX: (314) 884=4744

Name
School
Address
City, State Zip Code

Dear (Name) :

Thank you for agreeing to participate in my research. I am working to develop a valid and reliable measurement instrument to assess the difficulty of vocal solo repertoire. The process necessitates asking university voice professors around the country to serve as experts by reviewing scores of vocal solos and rating their difficulty in several categories according to a set of criteria I have defined.

I hope you will be able to take 15-20 minutes to help with this project. In order for the study to be valuable, it is imperative that you complete and return the index. All participants in the project will remain anonymous and all results will be confidential.

The enclosed packet of materials includes The Ralston Repertoire Difficulty Index and photocopies of five vocal solos. Please read the instructions carefully and complete the index. A self-addressed stamped return envelope is enclosed for your convenience. If you have any questions, please feel free to contact me at the address below or by calling (816) 665-9433, (E-mail address: C614503@Mizzou1.missouri.edu).

Please return the completed index by October 15, 1995. Your cooperation is greatly appreciated. Thank you.

In music,

Janette Ralston

Janette Ralston
Doctoral Candidate in Music Education

If you would like a copy of the results of this study, please complete the form below and mail it to me in a separate envelope. (E-Mail address if available).

Name_____

Address _____

APPENDIX N

Interjudge Reliability - Main Study

Interjudge Reliability

Range

Source	df	Sum of Squares	Mean Square
Judge	33	108.04705882	3.27415330
Song	4	144.25882353	36.06470588
Judge*Song	132	142.54117647	1.07985740

Tessitura

Source	df	Sum of Squares	Mean Square
Judge	33	136.12352941	4.12495544
Song	4	185.80000000	46.45000000
Judge*Song	132	164.20000000	1.24393939

Rhythm

Source	df	Sum of Squares	Mean Square
Judge	33	86.71176471	2.62762923
Song	4	423.90588235	105.97647059
Judge*Song	132	184.49411765	1.39768271

Phrase

Source	df	Sum of Squares	Mean Square
Judge	33	119.67647059	3.62655971
Song	4	173.44705882	43.36176471
Judge*Song	132	171.35294118	1.29812834

Melodic Line

Source	df	Sum of Squares	Mean Square
Judge	33	143.32352941	4.34313725
Song	4	235.35294118	58.83823529
Judge*Song	132	166.64705882	1.26247772

Harmonic Foundations

Source	df	Sum of Squares	Mean Square
Judge	33	97.81176471	2.96399287
Song	4	421.05882353	105.26470588
Judge*Song	132	148.54117647	1.12531194

Pronunciation

Source	df	Sum of Squares	Mean Square
Judge	33	140.00588235	4.24260250
Song	4	155.09411765	38.77352941
Judge*Song	132	254.90588235	1.93110517

APPENDIX O

Analyses of Variance - Main Study

Descriptive Statistics for Analysis of Variance

	Songs				
RRDI Criterion	1	2	3	4	5
Range					
Inexperienced					
M	2.00	3.12	4.59	3.06	2.29
SD	0.79	1.27	1.33	1.25	1.31
Experienced					
M	2.18	3.47	4.76	3.12	2.24
SD	1.19	1.55	1.35	1.22	1.09
Tessitura					
Inexperienced					
M	2.06	2.76	5.06	3.06	3.12
SD	0.97	1.03	0.83	1.25	1.50
Experienced					
M	2.47	3.71	5.76	3.47	3.06
SD	1.81	1.76	1.30	1.01	1.52

Descriptive Statistics for Analysis of Variance (Con't)

	Songs				
RRDI Criterion	1	2	3	4	5
Rhythm					
Inexperienced					
M	1.29	3.53	5.76	2.35	5.94
SD	0.47	1.12	1.52	1.17	1.25
Experienced					
M	1.59	3.53	5.06	3.18	5.24
SD	0.62	1.42	1.25	1.38	1.75
Phrase					
Inexperienced					
M	2.24	3.18	3.65	3.94	3.94
SD	1.09	1.63	1.37	0.90	0.90
Experienced					
M	2.12	3.12	4.18	4.00	4.00
SD	0.99	1.45	1.51	1.06	1.06

Descriptive Statistics for Analysis of Variance (Con't)

	Songs				
RRDI Criterion	1	2	3	4	5
Melodic Line					
Inexperienced					
M	2.18	4.29	5.88	4.65	5.18
SD	0.95	1.10	1.27	1.17	1.13
Experienced					
M	1.82	3.76	5.12	4.24	4.35
SD	0.88	1.52	1.45	1.60	2.06
Harmonic Foundations					
Inexperienced					
M	1.53	3.00	5.76	4.59	5.82
SD	0.62	0.79	1.03	1.12	1.33
Experienced					
M	1.47	2.65	5.47	4.24	4.94
SD	0.51	1.32	1.42	1.48	1.85

Descriptive Statistics for Analysis of Variance (Con't)

	Songs				
RRDI Criterion	1	2	3	4	5
Pronunciation					
Inexperienced					
M	1.88	2.88	4.00	4.06	4.76
SD	0.60	0.86	1.37	1.68	1.64
Experienced					
M	2.35	3.47	4.53	4.88	4.47
SD	1.37	1.77	1.84	1.58	2.10

VITA

Janette was born in Leon, Iowa to Donald and Sandra Dale. She completed high school in Bethany, Missouri at South Harrison R-I and received her Bachelor of Music Education degree from the University of Missouri-Kansas City, Conservatory of Music. Janette has taught in Missouri, Illinois and Texas and returned to Kirksville, Missouri where she received a Bachelor of Arts in Vocal Performance from Northeast Missouri State University. Janette is married to Neil Ralston and has two children, Jesse and Samuel.

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