THE NEGLECTED SOUND:

MUSIC "RE-INVENTED", LUCIANO BERIO *SEQUENZA III*

THE "ANTIDOTE" FOR VOCAL TECHNIQUE

by Fanelesibonge Khonzinkosi Mkhwanazi

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GLOSSARY

Term	Definition
Serialism	(In 20th-century music) the use of a sequence of notes in a definite order as a thematic basis for a composition and a source from which the musical material is derived.[1]
Avant-garde	The painters, writers, musicians, and other artists whose ideas, styles, and methods are very original or modern in comparison to the period in which they live.[2]
Virtuosity	The quality of being extremely skilled at something.[3]
Extended technique	This term is commonly used to describe an unconventional technique of playing a musical instrument or of singing.[4]
Vocal Technique	The technique of singing deals with concepts of tone and beauty, musicality and meaning, and expression and identification. It is a way of achieving beauty, goodness, and truth.[5]

[1] "Serialism," Collins English Dictionary, Harper Collins publishers, accessed September 7, 2024, https://www.collinsdictionary.com/dictionary/english/serialism.

[2] "Avant-garde," Cambridge Dictionary, Cambridge University press, accessed September 7, 2024, https://dictionary.cambridge.org/dictionary/english/avant-garde.

[3] "Virtuosity," Cambridge Dictionary, Cambridge University press, accessed January 20, 2024, https://dictionary.cambridge.org/dictionary/english/virtuosity.

[4] "Extended Technique," Music in movement, accessed September 7, 2024, http://musicinmovement.eu/glossary/extended-technique.

[5] "The meaning of vocal technique," Furman University, Bruce Schoonmaker, accessed September 7, 2024, https://facweb.furman.edu/~bschoonmaker/meaning.html.

ABSTRACT

"…but the voice is maybe not an instrument; it is a collection of technical and expressive possibilities that one must discover every time."[6]

This paper undertakes the "rediscovery" of the neglected sounds that makes up the "language" of human vocal expression; exploring the barrier between music and sound. By examining the use of Berio's extended techniques in *Sequenza III*, particularly in terms of vocal application, this paper will assess how the complex use of the voice in a composition like this can benefit the vocal technical element for classical singers.

The technical benefits of extended techniques have been somewhat investigated for different reasons. Though the approach that I will follow is taken from the claims of this technical style being a representation of the echo of our ancestors, meaning it's the closest to what "music" must have been for the early humans. And in terms of practical applications, there is a gap in literature, though there are a few suggestions. This paper will also offer a pedagogy approach to putting into effect this approach of bettering vocal technique.

The maintenance of vocal technical health is a crucial element in the life of a professional singer, as it can determine whether their career will be long and successful or short and abruptly ended. By evaluating the potential advantages and consequences of studying this type of work, it is possible to identify a counter approach that can enhance the methods that are employed in teaching singers this genre of music, thereby mitigating some of the consequences.

Keywords: Berio, *Sequenza III*, Extended technique, Vocal technique, Voice

[6] Clare Brady, "The Open Voice: Vocality and Listening in Three Operas by Luciano Berio**,"** PhD diss., (University of London, 2017), p. 47.

CHAPTER 1: INTRODUCTION

1.1 The "New Vocalism"

> "It is no longer possible to distinguish between word and sound, between sound and noise, between poetry and music; once more, we become aware of the relative nature of these distinctions and of the expressive character of their changing functions."[7]

Within the realm of conventional vocal music performance, performers would express their emotions by means of the melody and rhythm of the song. However, singers now utilise vocal pitch and a wide range of emotions to effectively convey their feelings in the musical performance, as a result of the new methods of musical composition and vocal technique. In this innovative approach, the musical rhythm is not restricted by beats, but rather, it is unrestricted and open to interpretation based on the singer's emotional journey through the performance, while at the same time maintaining the structure of the music. Instead of incorporating a melodic line, composers integrate ordinary everyday sounds of human vocalisation and interaction, such as shouting, crying, and so on. Moreover, knowing the music is not enough to give a good performance, it is imperative for the performer to demonstrate complete commitment and investment in the performance in order to deliver a powerful and thought-provoking presentation that evokes deep emotions from the audience.[8] It is important to understand this technique and its historical roots, below I will present a brief explanation on this matter.

The beginning of the twentieth century marked a shift in vocal musical development, breaking away from the routine of Western classical vocal music history and opening a new door to modern musical culture, "the new born baby of artistic thoughts," as described by Yang Wei.[9] The stress of rising modernism as composers explored the capability of the human voice and its functionality in previous centuries encouraged the exploration of the concept of what makes up music. Through this, the standard compositional devices were challenged, paving the way for uncharted sonic territory. During this period, all instruments, including the human voice, were exploited, and reinvented for their sonic capabilities.[10] By the late 1940s and 1950s in Europe and abroad, composers and singers began to question the traditional practice of vocal music, the *bel canto* style, and employed an extended technique, which refers to techniques that are outside the standard bounds of the *bel canto* singing style.[11]

A new approach, dubbed "new vocalism" by Wei, became a product of this shift. Wei describes "new vocalism" as being the renewing of humanity's freedom, as it brought about the emergence of "natural" human voice music. This method provided an extension of singing sound through its

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[7] Brady, "The Open Voice,**"** 44.

[8] Yang Wei, "'Extension' and 'fusion' – Discussion of modern 'New Voice' works and singing," *Advances in Social Science, Education and Humanities Research* 119*,* (July 2017): 1219-1221, https://doi.org/10.2991/essaeme-17.2017.251.

[9] Wei, "'Extension' and 'fusion'," 1219-1220.

[10] Melanie A. Crump, "When words are not enough: Tracing the development of extended vocal techniques in 20th century America," PhD diss., (The University of North Carolina, 2008), p. 14-15.

[11] Greenberg, Jonathan, "Singing," *Grove Music Online,* January 31, 2014, accessed January 20, 2024, https://doi.org/10.1093/gmo/9781561592630.article.A2258282.

incorporation in composition of natural sounds of shouting, crying, laughing, etc. Its unique technique of artistic expression has provided people with never-before-seen methods of music notation, never-heard sound effects, and unique technique expression. Berio and Cage are two of the most notable composers of the 20th century to explore "new vocalism," or the extended technique within their compositions.[12]

Berio makes use of this technique in *Sequenza III* by challenging the limitations that exist between the musical sound and the voice. In doing so, he abandons his traditional Italian roots of the practice of vocal music composition, which is known as the *bel canto* style. Berio's treatment of the voice in this composition is the most distinctive because he breaks free from the constraints of language tradition and the musical tone pitch in the traditional concept. Instead, he employs complex atonal music and vocal variety to express this "new vocalism" concept.[13]

While the concept of "new vocalism" deviated from the traditional practices of the *bel canto* style, it still drew upon '*bel canto*' as a foundation. However, "new vocalism" went beyond the expressive sonic constraints of *bel canto*. This leads us to question the potential vocal health advantages for singers who opt to explore the "new vocalism," as it is a technique derived from the *bel canto* known for promotion of healthy singing. Wei emphasises that a performer of this style must possess profound comprehension and mastery of their instrument in order to effortlessly convey their voice and deliver a performance that deeply resonates with the audience. [14]

Recognising the significance of acquiring proficient technique to execute this form of music prompts contemplation on its potential role in training and evaluating the technical prowess of singers in the classical singing style. While the *bel canto* style does demand a certain level of technical proficiency for a successful performance, it allows some flexibility in achieving a good outcome and building a successful career even without a deep understanding of technique. Consider the case of Ms. Evelyn Lear, a renowned American operatic soprano who enjoyed a highly accomplished career, being selected for numerous operatic roles and even receiving a Grammy award in 1966. During an interview with New York, she recounted the experience of losing her vocal ability in 1968 as a result of poor technique. Subsequently, she dedicated the following two years to reacquiring the skills and technique necessary to perform operatic repertoire.[15]

Ms. Lear is not the only professional vocalist to have encountered such a difficulty, but it is a prevalent occurrence among classical singers, as many singers still face vocal health issues during the course of their careers. This highlights the significance of acquiring a comprehensive technical comprehension of one's vocal abilities to avoid encountering such circumstances. On the other hand, "new vocalism" is commonly acknowledged as significantly more challenging, as a lack of comprehension of one's vocal technique would make it difficult to deliver a convincing performance, let alone build a successful career.[16] The complexity of vocal technique has consistently captivated me throughout my years of training as an opera singer. It encompasses

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[12] Wei, "'Extension' and 'fusion'," 1219-1220.
[13] Wei, 1219-1220.
[14] Wei, 1219-1220.
[15] Laurie P. Cohen, "That delicate voice: A singer's nemesis," *The New York Times*, June 26, 1983, https://www.nytimes.com/1983/06/26/arts/that-delicate-voice-a-singer-s-nemesis.html?smid=url-share.
[16] Cohen, "That delicate voice."

numerous elements that require diligent practice and cognitive focus while singing. Understanding it is a challenging task that requires consistent and meticulous practice.

1.2 The *bel canto* style

Before venturing further into the subject matter of this paper, allow me to provide a concise explanation and context regarding the conventional *bel canto* vocal technique, which served as the foundation for the subsequent emergence of the "new voice" style.

The term *bel canto* has been in existence for over a century, but its understanding and meaning have always been unclear. To provide further clarification, James Stark defines '*bel canto*' in his book as an advanced technique that involves the coordinated use of the respiratory system, vocal tract, and glottal source. This technique aims to achieve qualities such as register equalisation, breath control and support, the balance of bright and warm qualities in the voice, pitch and intensity control, and a pleasing vibrato. The term was also employed to denote music that employed this vocal technique; renowned composers such as Vincenzo Bellini, Gaetano Donizetti, and Gioachino Rossini are recognised for their utilisation of the *bel canto* style in their musical compositions.[17]

This singing style is rooted in the historical tradition known as the "old Italian school of singing", which originated in the late sixteenth and early seventeenth centuries. This marked the inception of the Baroque musical style. During this period in Italy, new forms of vocal performance emerged, marked by the emergence of solo singing as a departure from the Renaissance polyphonic style. This gave rise to new singing styles in compositions referred to as 'monodies' and *stile recitativo*[18]. During this period, a novel category of skilled virtuosic vocalists emerged, possessing extraordinary vocal prowess, and they established a set of guidelines for proficient singing that were transmitted across successive generations. The *bel canto* technique, which was an adaptation of these principles, later became the standard for excellent singing.[19]

Throughout the course of the vocal and instrumental music development, a new approach known as the extended technique emerged as a movement aimed at departing from the established *bel canto* style and rediscovering the innate qualities of the human voice, in the end of the 1950s.[20] The twentieth century saw the development of this technique within vocal music, though it had also been previously experimented with in instrumental music—mostly piano music—since the middle of the nineteenth century[21]. Despite the decline of *bel canto* as the prevailing vocal technique, its fundamental principles of artistic expression endured.[22] Hence, an alternative viewpoint would be that the "new vocalism" or extended technique built upon the *bel canto* style, is an extension of the healthy vocalising method exploration, as opposed to completely substituting or elimination of the *'bel canto'* style.

[17] James Stark, *Bel Canto: A History of Vocal Pedagogy* (University of Toronto Press, 1999), p. 189.
[18] Vocal music whereby the natural rhythm and inflections of speech are imitated in singing.
[19] Stark, *Bel Canto,* 190.
[20] Wei, "'Extension' and 'fusion'," 1219-1220.
[21] Examples include compositions like, *Au bord d'une source* (Liszt, 1852) and *Orage* (Liszt, 1855).
[22] Crump, "Words are not enough," 15.

1.3 Statement of the problem

There is a growing problem of classical singers who, due to inadequate vocal technique, end up damaging their voices. This issue has escalated into a significant concern within this industry. Inadequate technique can result in vocal damage and impair one's singing ability.[23]

Acquiring a thorough understanding of a proper vocal technique is essential for singers, as it is necessary for preserving the well-being and longevity of their voices. In the absence of it, singers may encounter vocal tension, vocal fold injury, or other vocal complications that can greatly affect their capacity to perform. It is crucial for classical singers to undergo comprehensive training and receive guidance from their teachers in order to cultivate and sustain a proficient vocal technique. This encompasses the comprehension of breath control, vocal placement, and engaging in various exercises to maintain vocal well-being. By prioritising the acquisition and implementation of good vocal technique, singers can reduce the risk of vocal damage and thereby ensure a long and prosperous career in the field. [24]

Hence, the objective of this study is to identify an approach or technique that can enhance the pedagogy of vocal technique in educational institutions. This method should encourage individuals to directly address and overcome their technical difficulties. This will be analysed by studying and comprehending the technical aspects in *Sequenza III* and the approach through which they can be explored.

1.4 Objectives

The main goal of this study is to both gain insight into the importance of extended techniques in contemporary musical practice and contribute to the pedagogical studies of vocal technique in relation to these techniques. This will be accomplished by observing the current research that has been done on the subject. Furthermore, significant consideration will be given to additional factors that contribute to the lack of overall enthusiasm for this music among both performers and the supporting audience.

1.5 Hypothesis

Berio examines and utilises various technical elements in a sudden and abrupt manner. Consequently, musical virtuosity necessitates singers who possess a profound comprehension of their vocal technique.

The vocal complexity and intricacy of Berio's *Sequenza III* presents numerous technical challenges for a singer. These challenges can be used as a tool for training singers in bettering their vocal technique. By engaging in the exploration of the technically demanding elements of the composition, singers are provided with a chance to refine their vocal abilities and reduce the risk of vocal injuries, thus fostering a habit of healthy singing.

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[23] Matt Edwards, “Vocal damage in Classical singers: It’s not just pop singers that get hurt,” Matt Edwards, August 13, 2015, accessed December 12, 2024, https://wp.me/p4FThP-2F.

[24] Penn Medicine Becker ENT & Allergy, “Why Can’t I Sing Anymore? – Exploring Voice Disorders in Singers,” accessed January 5, 2024, https://www.beckerentandallergy.com/blog/voice-disorders-in-singers#:~:text=Overuse%20of%20the%20vocal%20cords%20and%20poor%20technique%20are%20common,even%20loss%20of%20singing%20voice.

1.6 Research Significance

Throughout my eight years of classical training, I have consistently struggled to fully comprehend the concept of vocal technique. It encompasses numerous elements that require constant attention and simultaneous consideration while striving to deliver a compelling and proficient performance. The presence of excessive thoughts during a performance detracts from the authenticity of the performance, which is the emotional commitment and storyline development of the performance by the performer as well as the reception of the audience member.

The issue arises from the pedagogical framework employed in educational institutions for teaching vocal technique. When it comes to teaching, the technique is broken down into different components, which include breathing, resonance, pitch, agility, and so on. Although this method can appear notable due to its emphasis on individual treatment and development of each component, the approach contrasts with the interdependent functioning of the components. Hence, this would affect how one treats these components in the context of a performance, as one would tend to view them as distinct elements to consider. This would lead to the prioritisation of one element over the other, resulting in an imbalanced performance from a technical standpoint. Ultimately, this process generates an infinite cycle of vocal technique training, as there will always be aspects that require improvement.

This struggle of lacking the ability to employ the components within a performance in a balanced manner and not compromising the performance is not a challenge for all singers but it is for most, especially young singers, including myself. So, is there a method to integrate these distinct elements into a unified whole, enabling equal and simultaneous focus on each element and their interrelated development within the early vocal technical training stages for singers? Imagine if singers started grasping the concept of vocal technique in their early years of training, that would create a different ballgame in the opera industry, as well as open opportunities for complex works of extended techniques.

It is crucial to emphasise that my contention about exploring a new method for teaching vocal technique does not imply that the existing method is ineffective. Instead, it aims to enhance the current approach and potentially enhance and strengthen the development of vocal technique among performers. It should be noted that this “new method” may initially pose challenges in terms of comprehension and understanding. However, over time, individuals will adapt and become more familiar with it. According to the renowned quote by Allen Morgenstern, "work smarter...not harder," I sincerely believe that this approach is indeed a way to work smarter in order to guarantee the achievement of sustained enhancement in technique development.

Sequenza III is commonly studied for its complex nature and the vocal demand it possesses on the performer. Perhaps now we could explore the idea of using its challenging nature as a tool of improvement within the vocal technique training aspect. In developing a pedagogical strategy, an analytical comprehension of the work will help determine how it might be effectively implemented.

1.7 Literature Review: Extended Technique and Vocal Technique

This section will examine some of the studies that explore the use of vocal technique in vocal extended techniques. The selected studies serve as a basis for the following discussions and provide a contextual understanding of the connection between extended techniques and vocal technique training.

Janet Brehm Ziegler

Janet Brehm Ziegler who is a soprano singer, conducted a pedagogical study to explore extended techniques in her PhD dissertation, titled “A pedagogical guide for extended and extreme vocal techniques used in contemporary classical vocal music.” She asserts that extended techniques are a continuation of the *bel canto* technique, incorporating alternative methods of musical organisation and expression.[25]

Ziegler asserts that when performing contemporary music, vocalists will face difficulties due to the extensive utilisation of the voice, encompassing extended melodic, harmonic, rhythmic, and formal elements. These elements, previously regarded as mere noise, have now integrated into the fabric of this musical idiom. She subsequently asserts that there is a lack of resources when it comes to pedagogical strategies that delve into the teaching methods of this particular style.[26] Thus, such research studies can aid in developing this aspect.

Regarding the current methods of teaching vocal technique, Ziegler claims that they do not provide guidance on studying or teaching extended techniques. Instead, they primarily concentrate on training for the classical repertoire, which adheres to the techniques of the *bel canto* style. Hence, it is imperative to introduce new approaches to train vocalists in order to enable them to delve into the repertoire of extended techniques.[27]

Then, using elements of extended techniques from various musical compositions, Ziegler created vocal exercises and vocalises that, in her opinion, could be used to prepare singers for the use of these extended techniques. She also formulated exercises for extended technique elements of Berio's *Sequenza III*, including muttering and laughter, as part of these musical examples. Regarding the concept of 'laughter', she suggests that it should be produced with a pitched tone rather than 'too free’ so as to protect the voice and also avoid vocal fatigue. Ziegler also provides a set of exercises to train individuals in achieving this.[28]

Konstantinos Thomaidis

Konstantinos Thomaidis conducted an interview with three contemporary vocal artists—Jessica Walker, Mikhail Karikis, and Elaine Michener—to investigate their conceptualisation of voice utilisation in devising practices[29] and its perception and cultivation within these practices. [30]

According to Thomaidis, the voice is not just seen as a sound result, but rather as a productive substance, a source of inspiration, and an active collaborator in the process of creation and development. Concerning the use of voice in contemporary practices, he contends that our focus should transition from the inquiry of "what does it signify?" to the inquiry of "how does it function?"[31]

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[25] Janet B. Ziegler, “A pedagogical guide for extended and extreme vocal techniques used in contemporary classical vocal music**,"** PhD diss., (The University of Iowa, 2018), p. 1.
[26] Ziegler, “A pedagogical guide,” 2.
[27] Ziegler, 3-4.
[28] Ziegler, 76-89.
[29] A process of inventing or arranging something new. It can also refer to creating a new system of things.
[30] Karikis, M., Mitchener E., Walker, J. with Thomaidis, K, “Voice in devising/devising through voice: A conversation with Mikhail Karikis, Elaine Michener and Jessica Walker,” *Journal of Interdisciplinary Voice Studies* 1, no. 2 (2016): 173, https://doi.org/10.1386/jivs.1.2.173_7.
[31] Karikis, Mitchener, Walker with Thomaidis, “Voice in devising,” 175.

Moving away from being occupied with trying to understand the meaning but rather focusing on understanding the mechanism of vocal exploration.

Michener conceives devising of the voice as a tool used to develop a concept or an idea through an act of free creation, through openness and careful thought. She asserts that there should be no rules or restrictions as inspiration can arise in any context. For herself, experimenting through devising allows her the opportunity to learn to trust her instincts more and strengthens her confidence as an artist.[32]

She asserts that for devising to be effective a performer must have freedom to self-explore and also confidence, otherwise it wouldn't work. Michener states that herself as a performer she has learnt to not be afraid of where the process may lead her, she has acquired the ability to have openness and trusting the process. This also means that the performer must have some sort of self-awareness to steer away from self-indulgence but rather communicate ideas and concepts so to not turn this into an open therapy session. For Michener, second-guessing the audience is also not a welcomed thought in this process as it would create interruptions to the creative process.[33]

And when it comes to performing, improvisation is fundamental for her, as it means being in the moment. One must not always go back to tried-and-tested sounds and also copying what has been done before especially when it comes to extended techniques because neither requires musicality or imagination. [34]

Karikis on the other hand states that for him, devising is a process of collaborating with other people with an openness to welcome ideas that differ from yours. Working based on each other's individualities and personalities.[35]

"Until the turn of the twentieth century, the realms of language and music dominated our understanding of the voice, but the electrification of sound and voice recording technologies turned the voice into electrical waves or fixed it onto pieces of wax or vinyl." Karikis claims that the use of technology in the 1980's reshaped our understanding of the voice, as the voice became considered as matter. In his young age he considered it as material that can been seen as detached from the body. It was only in his early twenties that he began thinking and understanding the consequences of regarding the voice as material. On one hand, considering the voice as material gave him freedom of exploring it without being bounded by linguistic rules and musical methodologies. Whereas on the other hand, he reconsidered the political significance of the interrelationship between the voice and body, and now he considers it more as an embodied material.[36]

For Walker, devising is a thought-out process that involves a number of stages. Which begins with research for the material, then it is the exploration of the material under the initiated starting point by the team or one member. Walker claims that without this system it can rather becoming

[32] Karikis, Mitchener, Walker with Thomaidis, "Voice in devising," 175.
[33] Karikis, Mitchener, Walker with Thomaidis, 178.
[34] Karikis, Mitchener, Walker with Thomaidis, 179.
[35] Karikis, Mitchener, Walker with Thomaidis, 176.
[36] Karikis, Mitchener, Walker with Thomaidis, 176-177.

a frustrating process. Voice experimenting becomes a part of this process and later gets refined through repetition for the final performance.[37]

With regards to the voice, Walker claims that the voice cannot be seen as a separate entity from the body but rather the two are linked. She claims that vocal production is intertwined with the performer's personality, physiognomy and intent. Vocal personality is a result of voice materiality being embedded within the materiality of the person that is embodying the voice.[38]

With regards to improvisation, Walker sates that for her the process of improvisation must include a structure because without one, one's emotions can easily get uncontainable. Another helpful method for her performances was involving spontaneity, through using it as a response to the audience reactions. This helped her with keeping alert during the performance and also it was a way of rediscovering the music anew for herself and keeping it fresh.[39]

Nina Sun Eidsheim

Eisdsheim explores the ways that the voice is socially produced, as she rejects the notion of voice and vocal performance being natural phenomena. For Eidsheim, the understanding of voice is rather tied to human experience rather than being innate. She asserts that voice is purely cultural. The unique colour or tone of the voice is linked to cultural identity.[40]

Eidsheim used data from sixteen years' worth of participant observation within the classical vocal training to consider how the pedagogy and performance are used to racializing [41] and distinguishing the vocal timbre. She goes on to assert that voice instructors and voice pedagogy have presumptions that voice can be "known" and quantified, therefore making voice lessons a terrain for making gendered and racial meaning through voice.[42]

Through analyses of artists like Billie Holiday, Marian Anderson, Jimmy Scott, she explores the influence of these assumptions in shaping the perception of music's identity and authenticity. As she argues that perhaps "politics of listening" can be addressed by rejecting presumptions about voice, stating "at the outset of listening, and through attending to the process within which listening takes place—through listening to how we listen."[43] Eidsheim encourages listeners to think about the act of listening and the vocal timbre and racial politics of voice identification.

Gwenellyn Leonard and Jean-Jacques Rousseau

Leonard conducted a study for her PhD titled "A proposal to expand solo vocal pedagogy to include selected extended vocal techniques." In this study, she conducted experiments to investigate the potential benefits of singers studying extended techniques and its effect on the development of their vocal technique.

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[37] Karikis, Mitchener, Walker with Thomaidis, "Voice in devising," 176.
[38] Karikis, Mitchener, Walker with Thomaidis, 176.
[39] Karikis, Mitchener, Walker with Thomaidis, 178.
[40] Nina Sun Eidsheim, *The Race of Sound: Listening, Timbre, and Vocality in African American Music*, (Durham and London: Duke University Press, 2019), p.39-40, https://doi.org/10.2307/j.ctv11hpntq.
[41] Eidsheim defines it as the vocal identification by tone and colour, and everything about the sound of the voice, excluding the duration and pitch.
[42] Eidsheim, *The Race of Sound*, 49.
[43] Eidsheim, 58.

Leonard examined the expressive aspects of the voice associated with its presumed primitive function in the concept of "The old monkeys," which involves non-verbal vocalisations as the main form of communication before the use of verbal sounds. Meredith Monk (b. 1942), a contemporary singer, argues that the aesthetics of this music can be compared to the earlier primitive context, in which the voice is considered solely as a sound-producing instrument and is not constrained by language.[44]

Based on Leonard's collected experiments, it was found that the majority of singers, both vocally trained and untrained, showed positive improvement in their vocal technical abilities and awareness of their instrument during the training period. Based on this evidence, Leonard confidently asserts that extended techniques play a vital role in enhancing singers' technical skills.[45]

In addition, she asserts that when observing performers who employ extended techniques, such as Meredith Monk, Cathy Berberian (1925-1983), and Joan LaBarbara (b. 1947), one can witness the expression of emotions solely through sound, without the need for words or textual context. However, when examining singers of the *bel canto* style, their expressive capabilities are primarily confined to the vowel sounds they produce.[46]

Leonard's assertion goes hand in hand with the philosophies of a very influential philosopher of the 18th century, Jean-Jacques Rousseau. Rousseau was known for his ideas on the nature of human freedom, social contract theory and the importance of sovereignty. His ideas were a pessimistic reaction towards the movement of Enlightenment's focus on competitive individualism, as he advocated for education that nurtures rather than restricts natural instincts, proposing a return to the state of nature. Rousseau believed that this was something that got lost in the Enlightenment's focus on reason and science.[47]

He asserts that the human race would have long ago ceased to exist if our predecessors had solely depended on the reasonings of its members. Rousseau states that contemporary society corrupts individuals and diminishes their natural goodness. He argues that in their primitive state, humans were more virtuous and connected to their instincts.[48]

Leonard's assertion of the human voice being an expressive tool that requires no aid of language and her findings on the positive outcomes of vocalists using the concept of extended techniques as a form of exercise, is seconded by the philosophies of Rousseau on how the "primitive nurture" promotes virtuosity and a connection to natural instincts.

In vocal training of classic singers, teachers would often emphasise on the use of "natural" voice rather trying to manufacture a certain sound because that will restrict the voice and will create bad habits which will end up harming the voice and stopping vocal growth.

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[44] Gwenellyn Leonard, "A proposal to expand solo vocal pedagogy to include selected extended vocal techniques," PhD diss., (University of Oregon, 1990), p. 27-32.

[45] Leonard, "A proposal to expand," 85-91.

[46] Leonard, 48.

[47] Brian W. Dotts, *Educational Foundations: Philosophical and Historical Perspectives* (Cambridge: Cambridge University Press, 2018), p. 71-73.

[48] Dotts, *Educational Foundations*, 76.

Though Rousseau was well respected for his theories, his assertions also included misogynistic views when it came to the division of men's (Education of Émile) education and women's (Education of Sophie) education, women having to be subjected to less education than men and only being educated on how to be useful to men. An idea not so shocking as per his era, perhaps holding him accountable to that today would not be fair. Using his views on men's education as a standard (applying it to both genders), Rousseau asserts that education should be experiential and based on natural and development stages of cognitive and physical growth. He states that this frees the child to learn in the state of nature, therefore their natural interests and talents will emerge freely and naturally.[49]

Conclusion

The purpose of this literature review was to provide a focused conceptualisation of the voice especially when it comes to the creative process in contemporary music, as well as provide a current standing of pedagogical approach to extended techniques within institutions and benefits of singers exploring these techniques.

Leonard conducted experiments with trained and untrained singers that proved positive impacts of both groups exploring extended technique exercises to develop better vocal technical capabilities. For Leonard, this is due to the fact that extended techniques can be tied to the primitive context, "The old monkeys," therefore making it the most natural and instinctual way to explore the voice. Rousseau's philosophies are in the same sentiment as the claims of Leonard, as he asserts that when humans are in their primitive state, they are more virtuous and well connected to their natural instincts. Therefore, by all singers "mastering" this approach to all music, would it not eliminate any vocal challenges and limitations?

The social formation of vocal timbre and voice identification is the main area of study for Eidsheim. Both Eidsheim and Leonard discuss several facets of vocal sound, but Eidsheim focusses on the cultural components of vocal timbre and takes the stance that the voice is not intrinsic but rather the result of cultural impact. Leonard, on the other hand, believes that the voice is intrinsic and offers guidance on how to improve vocal tones through technical mastery.

Ziegler on the other hand focused on the pedagogical approach to implementing and facilitating the exploration of works that consists of extended techniques. She claims that the reason for less singers exploring such works, and the reason it often considered "difficult" is because of the lack of appropriate training materials for extended techniques in institutions, as focus in training is often given to classical repertoire. Perhaps it is through more academic engagements in this pedagogical approach that can shed light and develop interest to facilitate the implementation such "unorthodox" training in institutions.

Last but not least, a perceptual point in the conceptualisation of the voice within such practices is given by three contemporary artists in the interview conducted by Thomaidis. The expressivity and depth of the voice is said to be tied to the connection it has on the body. Karis states that for the longest time the understanding of the singing voice (music) had always been tied to its relationship to language, but with the emergence of sound electrification in the 1980's it brought this new understanding of the voice that separates it from its relationship with language. A new understanding of the voice as an embodied material, where music expressivity does not lie on the

[49] Dotts, *Educational Foundations*, 83.

words but the physiognomy, personality and intent of the performer. Requiring the performer to rely more on their natural instincts, and have a deeper understanding and connection to the music which they are performing.

The practised technical training in institutions does not so much encourage instinctual approach to music but rather a lot of thinking through engaging technique (*bel canto style*) and texts. As an opera singer in training, I often found myself confused on the technical standpoint, because there is a lot to remember and implement, while at the same time focusing on giving a convincing performance. What if singers are trained more from an instinctual technical point using the extended techniques exercises, what effect would that have if any to the *bel canto* repertoire as well?

The first time I encountered this repertoire was through a personal research inquiry on “Youtube” inspired by Cage’s “4’33” composition, which then led me to his vocal composition titled “Aria.” It was something that was bizarre and I could not understand, and I paid no mind to it, but that was until I was introduced to Berio’s *Sequenza III* by my supervisor. My interest in this repertoire has grown so much, but more even so because of its investigated and proven benefits in relation to vocal technical development. How could the interest for extended technique training exercises be facilitated in institutions?

In summary, Ziegler and Leonard examine the pedagogical methodology of this genre by suggesting vocal exercises and vocalises that facilitate the exploration of this style. Ziegler's approach was centered on facilitating the implementation of extended techniques, while Leonard's approach aimed to investigate the impact of these techniques on vocal development. During the interview conducted by Thomaidis, a performative perspective on the appropriate approach to this work was presented.

Now having explored some of the aspects that affect the studying and the performative side of this kind of repertoire, it is necessary to expand and explore more within the pedagogical approach to offer more ground to facilitate the incorporation of the extended techniques into current methods of vocal technique, as well as in its training and development within the classical vocal domain. Furthermore, comprehending the methods of monitoring it and growing the interest in this kind of repertoire amongst performers.

1.8 Research Limitations

This study may have some shortcomings that warrant consideration. The study materials, which include analytical literature and a pedagogical approach, are limited, with the majority consisting of research papers. There are relatively few pedagogical studies that focus on linking the practice benefits of extended technique exercises in traditional classical repertoire. The majority of public domain published material on this subject is descriptive commentary, which provides subjective opinions rather than insights into the composer's intention behind the composition. This is also due to the copyright’s restrictions on the work as it is part of the contemporary repertoire.

The other limitation is the practical implementation of this research which we will not get to conduct due to the duration of the dissertation as well as the given length limit of this research paper.

1.9 Thesis chapter outline

This thesis is divided into two sections, Section A and Section B. Section A provides a broad overview of the historical background and context of the research content. Section B, focuses on conducting an analytical study of the content and delving into the research objectives. I will expand on the content of each section in paragraphs below.

Understanding the background context of the composer, compositional style, and music—what Section A focuses on—is an essential component for building a clear path and fully appreciating the context of *Sequenza III* and the technique employed, shining light for the content which is later discussed in Section B. This section comprises two chapters, each of which has a distinct focus. Chapter two provides a concise summary of the composer's background, not limited to its relevance to Sequenza III, as well as an examination of the various factors that influenced Berio as a composer, including the influential individuals he encountered and the societal movements that shaped art and music during that time period, which led to Berio's exploration of extended techniques. Then in chapter three, we redirect our focus to the Fourteen *Sequenzas*, among which the central component of this paper, *Sequenza III*, is included. This chapter offers the reader insight into Berio's compositional approach to this body of work as well as the composer's intention behind the use of the technique.

In Section B, we commence the analytical examination of *Sequenza III*. This section consists of four chapters. The first chapter of the section is chapter four, which presents an outline of the structure of *Sequenza III* and the composer's intentions. Additionally, a brief examination of the influence and contribution of Cathy Berberian to this body of work is explore, as well as a perspective of a performer, specifically myself, in this composition is provided. In chapter five, a comprehensive examination of the analytic literature on *Sequenza III* is presented. This analysis delves into the advantages and disadvantages that the composition may present for young singers in terms of its possible impact on their vocal technique development when presented as a training tool, which we look at in the following chapter, chapter six. Then the seventh chapter provides the conclusion on the findings, as well as provide the direction for future research.

Section A
Chapter 2: The Making of Luciano Berio

This chapter aims to provide a historical comprehension of the composer and the factors that impacted his creative trajectory, resulting in his investigation of extended techniques in the composition *Sequenza III*.

2.1 Early Life and Education

Luciano Berio (1925–2003), an Italian composer, teacher, and conductor, was born in the small Ligurian port of Oneglia. He was born into a musical family, with both his father and grandfather working as professional pianists, organists, and composers. From the young age of six, Berio began his musical education under the tutorship of his father, who studied at the Milan Conservatory.[50] Like many great classical composers known today, the likes of Bach, Beethoven and others, Berio's childhood was enriched with music, nurturing and developing the passion he would soon pursue.

Berio began his piano endeavours at his father's chamber music gatherings at the tender age of nine, and by his early adolescence, he had already embarked on composing his own musical compositions. His career was on track towards becoming a professional pianist until, at the age of nineteen, he sustained a finger injury that rendered him unable to continue playing professionally. Berio incurred the injury while drafted into the army during Mussolini's invasion of Liguria in 1944. The incident was caused by the mishandling of a firearm during training, leading to an accidental discharge that injured his finger. As a result of this incident, Berio redirected his musical endeavours and transitioned his career trajectory towards composition.[51]

2.2 The Birth of "Berio the composer"

In 1945, after being discharged from the army, he enrolled at the Milan Conservatory to study composition and law. After a year, he dropped his law major and concentrated solely on his composition studies. During his first year of studies, he had the opportunity to see works by Schoenberg, Stravinsky, Milhaud, and Bartók performed. Schoenberg's *Pierrot lunaire* was one of his favourite works. In addition to the knowledge, he gained from his father's lessons, these works piqued his interest. Along with his technical counterpoint studies with Paribeni, he was imitating a wide range of compositional models, particularly those of Prokofiev and Ravel at this point.[39] Berio had developed a perceptual mode that was exploratory and inventive.[52]

Berio enrolled in Ghedini's composition classes in 1948, where he encountered a major formative influence. "Ghedini's acute sense of the achievements of Stravinsky, and his own fastidious grasp of instrumentation both imprinted themselves rapidly upon Berio's work."[53] Ghedini was well-known for his ability to manipulate the various timbres and textures of the instruments in his

[50] David Osmond-Smith, and Ben Earle, "Berio, Luciano," *Grove Music Online,* (2001), https://doi.org/10.1093/gmo/9781561592630.article.02815.
[51] Osmond-Smith, and Earle, "Berio, Luciano."
[52] Patti Yvonne Edwards, "Luciano Berio's *Sequenza III*: The use of vocal gesture and the genre of the mad scene," PhD diss., (University of North Texas, 2004), p. 1.
[53] Osmond-Smith, and Earle, "Berio, Luciano."

instrumental compositions. He had used serialism on occasion and did not discourage students who wanted to delve deeply into its techniques.[54]

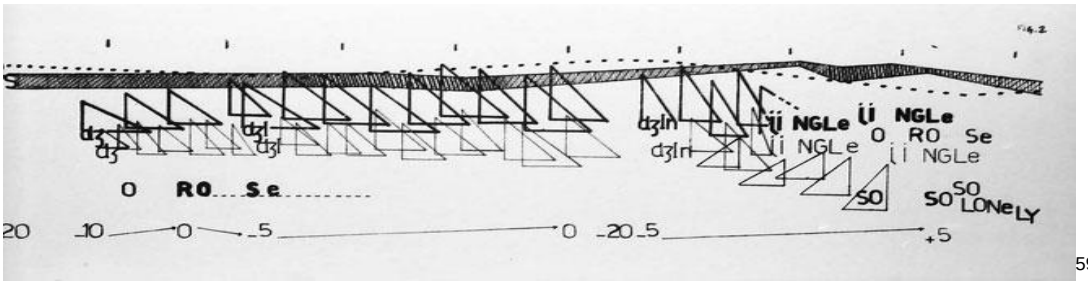
During his time in Milan, after the army accident, he worked as an accompanist for singing classes, earning a modest living, since he could no longer play professionally. During this time, he met Cathy Berberian, a young American singer who was one of the students he accompanied.[55] This was the initial interaction of the relationship that would subsequently become significant in his vocal compositions at a later stage, which will be discussed subsequently.

Berio's compositional productivity peaked in the late 1950s, particularly with orchestral works. However, Berio began to focus on works for smaller ensembles, which were more susceptible to frequent performances; they provided the foundation for establishing his rapidly growing reputation in the United States of America and Europe. Among them are *Différences* (1958–9), *Tempi concertati* (1958–9), *Circles* (1960), and a work written for flute that kicked off a long series of *Sequenzas* for solo instruments, for which *Sequenza III* is a part of.[56] It was not till the early 1960s that he began exploring the limits of the voice, in particular, Berberian's voice.

Although Berio may not be widely known among contemporary Western classical music audiences, scholars describe him to be a notable composer within the Western art music canon. The familiarity and interest in his extended techniques performances and recordings is relatively low due to a lack audience for the musical style.[57] His compositional style–specifically in relation to the *Sequenzas*–is of a unique nature compared to the majorly performed works today by composers such as Mozart, Puccini, Bellini, etc. He is among a minority of composers who pushed boundaries in the 20th century to explore the other side of "what is considered as music?" Some of these composers include, Arnold Schoenberg (1874-1951), Henry Cowell (1897-1965), John Cage (1912-1992), György Ligeti (1923-2006), and others.

Berio's fascination with this experimental approach was the dissolution of comprehensible language into sounds, and interest he had already started exploring on his earlier work, *Thema* (1958). In *Thema*, he organised the words by phonetic content and sorted them in a series of articulations that were incredibly difficult to produce in actual speech.[58]

[54] Osmond-Smith, and Earle, "Berio, Luciano."
[55] Osmond-Smith, and Earle.
[56] Osmond-Smith, and Earle.
[57] Nena Beretin, "A Study of the Critical Reception and the Dissemination of Luciano Berio's Works," PhD diss., (University of New England, 2015), p. 3.
[58] Tina Huettenrauch, "Three case studies in twentieth-century performance practice," PhD diss., (Louisiana State University and Agricultural and Mechanical College, 2012), p. 111.



[59]

Figure 1: Luciano Berio's linear time graph fragment of Thema

In addition to his experiments with text and language, Berio began to incorporate more theatrical elements into his compositions. His focus on the audience's attention onto a lone female protagonist's agony on stage is perhaps the closest link to the theatrical themes developed in *Sequenza III* later.[60]

Berio's compositional approach is conjured by many great people he interacted with within the period of his life, it is "an archive of intellectual exchange." In one interview he had with Philippe Albera, Berio described his work as the "result of a joint research work," referring to the influences that directly/indirectly gave birth to the character of his music.[61] In the subsequent sections, we will examine the factors that significantly impacted his compositional career.

2.3 Influence of Serialism

The beginning of 1920's marked the rise of a new compositional technique and philosophy called serialism. This technique was developed by Arnold Schoenberg and his pupils Anton Webern and Alban Berg, the Second Viennese School[62]. It was a stylistic revolution that emerged as the most powerful outgrowth from the tonal crisis, and it served as the organising force of musical modernism for decades.[63]

Serialism played an important part in the shaping of Berio's early career. This interest was piqued by his composition teacher, Federico Ghedini, when he was at the Milan Conservatory. The serialist technique involves the use of a fixed series that consists of a particular musical element as the basis of the musical piece. Serialism makes use of a 12-tone technique to create a fixed series. The order of the series stays the same for the entire duration of the piece, no notes may be repeated until all 12 tones are played; though the series may not be rearranged, it can be inverted. [64] Below is an example of how Berio implemented it in one of his compositions.

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[59] Visual Music / Immaterial Colors. Synesthetic Temptations and Cross-Media Perspectives During Sixties and Seventies - Scientific Figure on ResearchGate. Available from: https://www.researchgate.net/figure/Luciano-Berio-Thema-Omaggio-a-Joyce-1958-frammento-di-partitura-musicale-da-Illiano_fig13_307837321 [accessed 4 Feb 2025].
[60] Huettenrauch, "Three case studies," 112.
[61] Philippe Albera and Jacques Demierre, In *Revue Contrechamps n° 1*, (1983), p. 2.
[62] A group of composers in the early 20th century, mainly Schoenberg and his students, Webern and Anton, as well as their close associates.
[63] Georgina Born, *Rationalizing Culture IRCAM, Boulez, and the Institutionalization of the Musical Avant-grade* (Berkeley and Los Angeles, California: University of California Press, 1995), p. 48.
[64] Ben Dunnett, *Ice Melt,* accessed December 15, 2023, https://www.musictheoryacademy.com/understanding-music/serialism/.

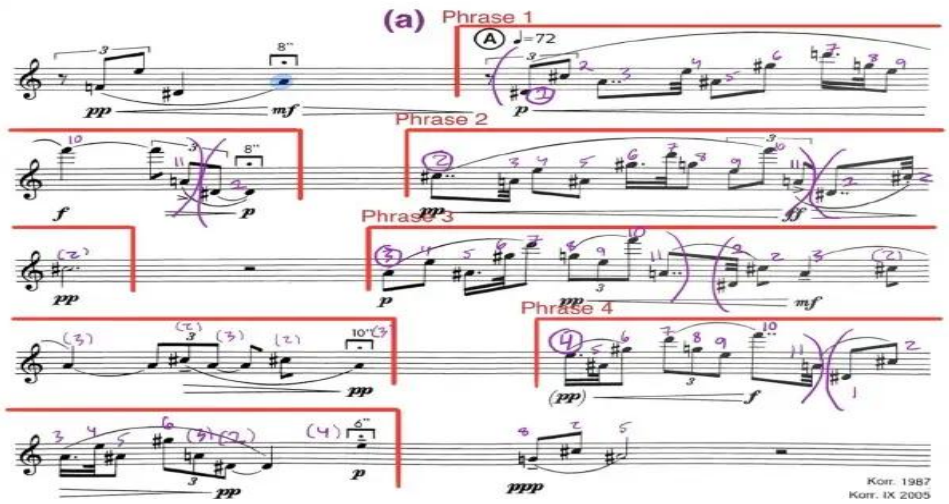

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Figure 2: Sequenza IXb, 12-tone technique application

Above is an example of Berio employed the 12-tone technique through systematic procedural manipulation to create ongoing variation. Pitch manipulation is first achieved from letter A through a 11-pitch sequence, D#, C#, A, E, A#, G#, D, G, E, F, A, which is then paired with a 12-pitch count per phrase.[66]

One of Berio's contemporaries, Luigi Dallapiccola (1904-1975), was well known for his mastery of the 12-tone technique.[67] Dallapiccola's work became the most congenial example for many young Italian composers like Berio at the time.[68] In one interview, Berio describes the importance of Dallipiccola's influence on Italian music, saying "One other encounter was fundamentally important, not just for me but for the whole of Italian music: Luigi Dallapiccola [...] It was perhaps he, more than anyone else, who deliberately and unremittingly forged relationships with musical culture."[69]

Without associating himself too closely with any singular school of serial thought for too long, Berio adopted and developed the techniques he saw in the music of his contemporaries, particularly Karel Goeyvaerts, Luigi Dallapiccola, Karelheinz Stockhausen, Henri Pousseur, and Bruno Maderna, before abandoning it in 1958. Despite his eventual rejection of the serialism technique, his experience with it continued to have a significant impact on his development as a composer in his subsequent works.[70]

Though Berio may have embraced this technique in the beginning to the point that he described it as a powerful tool for exploring new musical territories, his eventual change of interest was due

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[65] Joshua Heaney, "The development of Luciano Berio's Sequenza IX and its implivations for performance practice," PhD diss., (Graduate College of Bowling Green State University, 2023), p. 86.
[66] Ibid.
[67] Patti Yvonne Edwards, "Luciano Berio's *Sequenza III*: The use of vocal gesture and the genre of the mad scene," PhD diss., (University of North Texas, 2004), p. 3.
[68] Osmond-Smith, and Earle, "Berio, Luciano."
[69] Brady, "The Open Voice," 55.
[70] Christoph Neidhöfer, "Inside Luciano Berio's Serialism," Music Analysis 28, no. 2/3 (2009): 301, http://www.jstor.org/stable/41289709.

to certain issues he encountered with the technique. According to Berio, while this technique could be viewed as a valuable tool, there was still the issue that it was too susceptible to formalistic attitudes and lacked musical substance. As he stated, “In losing himself in the manipulation of a dozen notes, a composer runs the risk of forgetting that these notes are simply symbols of reality; he may, in addition, end up ignoring what sound really is.”[71] According to Berio, the technique hindered the exploration of melody and merely confined composers to established rules.

Berio’s rejection of the technique was something that other people seemingly agreed with, Christoph Neidhöfer argued that those who liked the technique were motivated by a misunderstanding of the composition's relationship to the "analysis-turned-theory" by stating the following:

> A theory cannot substitute for meaning and idea; a discrete analytical tool can never be turned to creation by dint of polishing and perfecting it. It is poetics which guide discovery and not procedural attitudes; it is idea and not style ...This basic fact has been missed by those who insist on trying to create a twelve-tone Utopia of 'twelve-tone coherence' by forcing on us the dubious gift of twelve-tone melodies…[72]

Both Berio and Neidhöfer make a crucial argument, because if we are bound by the rules of the technique instead of just creating, then one will most likely lose the essence of what music is supposed to be. So, what exactly is music intended to be? What purpose is it serving? Could music’s purpose in its all-in-all be fully expressed within the 12-tone system? Well, this could be a topic for another paper, as there is so much to be said about it. But looking back at Berio's inquisitiveness, one can already tell that this may have been the point that sprouted the beginning of his extraordinary creative career as a composer and his search for music’s expressivity.

Upon Berio disassociating himself from serialism he sought to explore his musical language more in depth, which the technique didn’t fully accommodate. Some of its traits that stayed with him were the serial understanding of musical parameters and serial ordering processes. These traits continued to have an impact on his development as a composer into the 1960s and beyond.[73] For instance, Berio would use a serial approach for his “objective extension of musical means.” One of his pieces in which this approach was applied is the 1953 Chamber Music, written for soprano, clarinet, cello, and harp. He employed a flexible twelve-tone row and its permutations to allow for repeated note cells or pitches that make up only a portion of the row.[74]

Berio argued that for a musical structure to be considered meaningful, it must be constructed as an entity and a concrete musical object that makes sense, rather than as a collection of divergent components.[75]

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[71] Osmond-Smith, and Earle, "Berio, Luciano."

[72] Neidhöfer, “Luciano Berio’s Serialism,” 303.

[73] Ibid., 304.

[74] Beretin, “Critical Reception,” 19-24.

[75] Neidhöfer, “Inside Luciano Berio’s Serialism,” 304.

In comparison to most his notable contemporaries, Berio rejected the use of serial methods as an organising concept for his works. His transcribing method might be seen as a reaction to the overheated rhetoric of the postwar avant-garde movement, for whom the rejection of the musical past acted as a rallying cry.[76]

2.4 Electronic Music Influences

The serialist tradition was generally formed to reject and oppose popular music references. However, there were composers like Stravinsky and Vaughan Williams, among others, who drew on folk music to create different nationalist varieties of modernism. They were drawn to folk music's modes, melodies, and structural forms.[77]

Postmodernist composers have continued to use folk, ethnic, and non-Western music in their works as a source of inspiration, transformation, and reference. Berio had a strong fondness for folk music throughout his career, and he gathered songs from printed anthologies, old records, and oral tradition from folk friends and musicians. When he would combine the folk song and art, he would not preserve the authenticity of the song; instead, Berio would transcribe and analyse the original content so that he could incorporate it within the context of his own musical language.[78]

He created a new and unique soundscape for his listeners by using non-traditional instrumental combinations for his smaller and larger ensembles and orchestral layout, as well as live electronics. For example, in one of his compositions, "Coro" (1975), he fused the human voice with orchestral sounds by placing each singer next to a string or wind instrument of corresponding pitch range; a soprano is paired with a flute, oboe, or violin, a bass vocalist with a horn player, and so on.[79]

It was in 1952 that Berio's interest in electronic music was piqued. He attended a concert in October, hosted by Leopold Stokowski at the Museum of Modern Art, which showcased electronic compositions of Vladimir Ussachevsky and Otto Luening.[80] This experience left him with a desire to explore and delve deeper into this musical style.[81]

Upon his return to Milan, he seized an opportunity to experiment with this style when he took a job with RAI *(Radiotelevisione Italiana)*, one of Italy's largest broadcasters, with a high target audience in Europe. In 1953, Berio was tasked with composing the soundtrack for a series of television films. In that same year, he met Maderna, who at the time was drafting proposals for an electronic studio at RAI. Upon their shared interest, they combined ideas together and planned the opening of their studio in Milan, and from then on, they were quickly drawn into a friendly collaboration.[82]

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[76] Thomas Peattie, "Luciano Berio's Nineteenth Century," *Contemporary music review* 38, no. 3-4 (2019): 420.

[77] Beretin, "Critical Reception," 35.

[78] Beretin, 35.

[79] Beretin, 36.

[80] Columbia University Libraries, "Vladimir Ussachevsky," accessed February 7, 2025. https://exhibitions.library.columbia.edu/exhibits/show/music-centennial/electronic-and-computer-music.

[81] Osmond-Smith, and Earle, "Berio, Luciano."

[82] Beretin, "Critical Reception," 41.

Maderna and Berio co-directed *Studio di Fonologia di Milano della Radiotelevisione Italiana,* which opened in 1954. Initially, the studio generated electronic soundtracks and backgrounds for fiction, mostly for radio and television. The studio was thereafter used by both composers to investigate the growing resources of *musique concrète* and 'electronic music.' *Ritratto di citta* (1954), Berio's debut radiophonic narrative, was created in partnership with Maderna. The text, written by Roberto Leydi and spoken by Cathy Berberian, depicts Milan waking up from its slumber.[83] Soon after, the studio was also used to house works by other composers. During this time, Berio contributed significantly to the development of electronic music.[84]

Berio's collaboration with Maderna provided him with various opportunities because of the numerous contacts he was able to make. In 1956, he premiered *Nones* at the Darmstadt summer school, which was his first major orchestral work and from which he received raving reviews. In that same year, Berio and Maderna began organizing *Incontri Musicali* (Musical Encounters), a series of performances devoted exclusively to modern music. The first concert took place in Milan the following year.[85]

Berio's appeal to electronic music, on the other hand, was not so much the discovery of new sounds as the possibility it afforded the composer of integrating a greater region of sound phenomena into the musical mind, thus transcending a dualistic understanding of musical thought. For instance, he collaborated with philosopher Umberto Eco on a radio project titled *"Onomatopoeia nel linguaggio poetico."* The objective for Eco was to showcase different uses of onomatopoeia in contemporary literature, while Berio's aim—particularly in their initial collaboration, *Thema*—was to achieve an entirely new kind of unity between music and language by exploring possibilities for a continuous metamorphosis between the two. [86] an

2.5 Musilanguage

Along Berio's musical journey, he developed and interest for linguistics, an interest which was motivated by the desire to find more meaning in music through its relationship with language. There were specific encounters that played important roles in that path of this exploration, which will be addressed further in the following paragraphs.

As discussed within the previous section, his collaboration with Eco birthed an interest of wanting to understand and explore the relationship between music and language. Eco imparted to Berio a lasting enthusiasm for James Joyce, while Berio acquainted Eco with the nuances of Saussure's linguistics. The broad field of semiotics, which Eco introduced, served as an influential framework for Berio's enduring interest in instrumental and vocal gesture in the years that followed. Berio's unusual delight in utilising his contemporaries' intellectual adventures as an imaginative springboard remained with him.[87]

Their first work together *Thema*, which was initially composed to be the closing song of their radio programme, *"onomatopoeia nel linguaggio poetico,"* it was later reworked and published by Berio later as a composition for voice, and was sung by Berberian. The text was an adaptation from

[83] Beretin, "Critical Reception," 41.
[84] Osmond-Smith, and Earle, "Berio, Luciano."
[85] Osmond-Smith, and Earle.
[86] Beretin, "Critical Reception," 42.
[87] Osmond-Smith, and Earle, "Berio, Luciano."

James Joyce's *Finnegan's Wake*. Berio explore the relationship between the two phenomena by combining and electronically manipulating Berberian's vocalisations, creating a stream of half-comprehended utterances, where words and pieces of speech are drowned by "meaningless," synthetic sound.[88] This was the point that his taste for creative collaborations quickly became apparent.

Joyce's work offered an inspired context for much of Berio's preoccupation with instrumental and vocal gestures throughout the preceding years. His unusual delight in adopting his contemporaries' intellectual adventures as a creative springboard never left him.[89] Berio became even more interested in linguistics after working with Eco on Joyce's spoken word. It fuelled his desire to comprehend and/or explore the relationship between music and language.[90] In an interview with Philippe Albera and Jacques Demierre, when asked about his interest in linguistics, he states "I think I felt very acutely the need inherent in music to explore the eternal journey between sound and meaning. Not a specific meaning, but a meaning of musical processes."[91]

Berio described his new approach involving linguistic comprehension as a complementary approach to the serial movement of the 1950s in an interview with Rossana Dalmonte. He explained that when he explored with only the serial experience, his search for a new musical language became a little void. He then stated that he had to dig deeper in order to find more specific points of reference, which is where his study of Saussure's linguistics came into play.[92]

The works of Saussure had a significant influence on Berio because they provided a rational basis for the impulses of expressiveness, exploring the universality of the phenomenon. He wondered if the universality of language experience could be achieved in music, since culture's existence is tied to music.[93]

Another scholar of linguistics that had an influence on Berio's compositional journey is Edoardo Sanguineti. His political motivations served as the basis for his realistic writing style, which had an impact on Berio. Berio described Sanguineti's writings as "...very harsh, very aggressive on the inside, but they reveal a very vast world, quite calm, quite dantesque!"[94]

For Berio, the sole understanding of the interdisciplinary exchange between these two phenomena, music and language, was more important than tying its comprehension within a certain movement as he stated, "…I don't believe in movements…" His objective was to explore musical meaning without boundaries, discovering a "universality of experience."[95]

Musilanguage is a term used to define the interrelationship found between music and language; this concept was coined by a scholar named Steven Brown. He claimed that the explanation to

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[88] Beretin, "Critical Reception," 42.
[89] Osmond-Smith, and Earle, "Berio, Luciano."
[90] Rossana Dalmonte and Niva Lorenziniin, In *Revue Contrechamps n° 1,* trans. Daniel Haefliger, (1983), p. 71-74.
[91] Albera and Demierre, In *Revue Contrechamps n° 1*, 61.
[92] Albera and Demierre, 61-63.
[93] Albera and Demierre, 61.
[94] Albera and Demierre, 61.
[95] Albera and Demierre, 60-61.

the similarities found between these two phenomena, for example, their expressive phrasing, is due to the fact that they emerged as one entity (musilanguage), functioning parallel to each other, and later diverged to two different entities.[96] Berio's fascination with the exploration of the interdisciplinary between the two phenomena can be seen as a search of rediscovery of musilanguage.

As a singer, I have been interested in understanding the relationship between music and language, so I investigated this theory for my Honours research paper. It is a full circle as I return to this subject for my Master's, approaching it from a somewhat different perspective within the context of Berio. I believe it is an undeniably important topic for any musician to examine because it provides a better grasp of one's tool of creative expression.

2.6 Modernism

Modernism was a 20th-century movement that reflected the period of innovation and advancement in musical language. It was a time of different reactions to re-examining and reinterpreting earlier musical categories, as well as inventions that led to new ways of arranging and approaching certain aspects of music, such as harmonisation. The movement was regarded as a rejection of tonality.[97] Berio's perspective is more receptive to the recent researchers of musical modernism, who regard the phenomenon as a reflection of capitalism's problems rather than a denial of tonality's fundamentals.[98]

His interest in the history of music in all its forms served to deepen his own thoughts about the relationship between his own compositional process and his transcribing practice. Berio examined it from a standpoint of celebrating "his inheritance" in a way that revealed a self-conscious awareness of how its various historical layers are intimately linked to the present.[99] He notes, "... we always carry around with us our precedents—a mass of experiences, 'the mud on our shoulders', as [Edoardo] Sanguineti put it, and therefore a virtual set of choices from the perennially present noise of history."[100] He felt inspired to investigate music's complete potential, connecting it to its historical applications, while resisting the constraints of rules imposed by contemporary society.

2.7 John Cage and Cathy Berberian

Lastly, on the long list of Berio's influential encounters are John Cage and Cathy Berberian, whose influence on Berio had a huge impact on the composition of discussion, *Sequenza III* for female voice.

Berberian and Berio's relationship was far more than a "simple" professional partnership. Their initial encounter was in Milan when Berio was accompanying for singing classes. But romantic feelings developed when Berio was asked by Berberian to accompany her for her scholarship application audition videos. The attraction between them was immediate. Months after, they

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[96] Fanelesibonge Mkhwanazi, "The language of music: A preliminary study of theories concerning its origins and evolution," Honour's thesis, University of Cape Town, 2021, p. 11-12.
[97] Kathleen Kuiper, "Modernism," Encyclopedia Britannica, January 5, 2024, accessed March 12, 2024, https://www.britannica.com/art/Modernism-art.
[98] Beretin, "Critical Reception," 57-60.
[99] Peattie, "Luciano Berio's Nineteenth Century," 421.
[100] Peattie, 421.

decided to get married. Their marriage, however, lasted for only 14 years, from 1950 to 1964. During the course of their marriage and even after divorce, Berberian was Berio's muse for many of his female voice compositions. They maintained a great partnership.[101]

Berberian's success as a performer was not exclusively attributed to her collaboration with Berio; she also forged creative partnerships with other composers, including Sylvano Bussotti, Maderna, and Cage.[102]

Berio's first encounter with Cage was in 1958 while attending the controversial and thought-provoking lectures Cage was giving at the Darmstadt International Summer School. He attended the lectures as a representative from his workplace, the *Studio di Finolagia*. Berio had been working on a project that aimed to involve composers from around the world. Subsequently, he extended an invitation to Cage to collaborate on new artistic endeavors during the winter season at his residence in Milan, a gesture that Cage accepted with respect. While residing at Berio's home, Cage met Berberian, who was then married to Berio, and with whom he later collaborated on a composition titled *Aria*.[103] Berberian performed this composition in Darmstadt, receiving positive feedback from the audience and generating extensive interest. Upon witnessing this, Berio was inspired to experiment with this vocal stylistic technique for his own work.[104]

After Berberian's performance, Berio began writing vocal compositions for Berberian in a similar manner. The first work Berio wrote for female voice was *Circles* (1960), it incorporated the accompaniment of a harp, and two percussionists, this composition showcased his own take on the style. Then in 1961, Berio composed *Epifanie* for voice in the same experimental style, with an orchestral part as accompaniment. Even though the music was still very experimental, he provided the voice with a melodic line in both compositions, keeping the Italian lyrical style, and both of these pieces were written with accompaniment. These, among others, were Berio's early experiments with this acrobatic "out of the ordinary" style of vocal composition. [105]

When it came to composing *Sequenza III* for female voice, Berio did not bound himself so much to the Italian lyric style, but rather explored the instrument in its entirety. The piece was composed without accompaniment. When one compares Cage's *Aria* and Berio's *Sequenza III for female voice*, one can see/hear the similarities in the way the voice is experimented upon.

Berberian's vocal prowess in this work was a significant benefit to Berio, particularly due to her vocal ease and exceptional technical mastery of her voice. He described it saying, "[Cathy Berberian's voice] was almost a second *Studio di Fonologia* for me." For Berberian, experimenting with her voice was not something she started as an adult but it was something she practiced even as a child, as she stated that for her, she considered to be no barriers in how she utilised her voice, as there was nobody to tell her what to do or what not to do. She had the freedom to explore her "pure" sound. By adulthood, she had acquired a technique and vocal agility that were suited

[101] David Osmond-Smith and Cathy Berberian, "The Tenth Oscillator: The Work of Cathy Berberian 1958-1966," *Tempo* 58, no. 227 (2004): 2-13, accessed February 06, 2025, https://www.jstor.org/stable/3878673.
[102] Osmond-Smith and Berberian, "The Tenth Oscillator," 2-13.
[103] Brady, "The Open Voice," 44-49.
[104] Osmond-Smith, and Earle, "Berio, Luciano."
[105] Osmond-Smith, and Earle.

for such experimental works.[106] This is an assertion of Rousseau's philosophy on human freedom, the "primitive nurture" that promotes virtuosity and helps to connect one more to their instincts.

2.8 Summary

There are many influential encounters and social movements that paved a path for the arts and in this regard created a foundation of great inspiration and direction that shaped Berio's compositional style by feeding his creative mind. These experiences provided him with a fertile range of technical resources, which he used to create the most magnificent and vivid works of the decade.[84]

His compositional career has been a journey of rediscovering music through exploring it in its expressiveness capacity aside from the music methodologies and its ties to language. Berio throughout his compositional journey explores music expressive capabilities, which he does through exploring the serialist technique, to developing an interest in understanding the character of music in relation to language and exploring the many possibilities of creating sound through modernism. And one of the greatest influences, especially regarding Berio exploring the vocal expressive capabilities is Berberian, who became a muse for many of his vocal compositions.

Upon examining Berio's career trajectory, perhaps one could even call Berio's compositional career a "group effort," judging by the important parts that all his encounters played in their influence on how his perception of music composition changed and grew. But of course, this is not only unique to Berio; all great composers become great composers because of the influential paths, whether positive or negative, that have shaped them so.

[106] Huettenrauch, "Three case studies," 108-109.

CHAPTER 3: Introduction to the Fourteen *Sequenzas*

This section will provide the details pertaining to the significant collective work of the fourteen *Sequenzas* by Berio, which includes *Sequenza III*. Berio's late-fifties experience supplied him with a fruitful set of technical resources that served as a basis for the brilliant and vivid compositions of this decade. His fourteen *Sequenzas* for solo instruments are among his most notable works. [107]

3.1 Introductory content

The Sequenza compositions by Berio were initially written as stand-alone pieces, composed between the years 1958 and 2002. These compositions are regarded as innovative and represent a significant addition to the repertoire for solo instruments, highlighting Berio's distinctive approach for technique, sound, and structure. His great understanding of the dramatic dimension is evident in all these *Sequenzas*, especially in their performances. Much of the *Sequenzas* creative foundation was nurtured by the structuralist tradition, particularly as reimagined by semiotics, of which Eco was becoming an inventive exponent. [108]

Berio's own reinvention of the nineteenth-century virtuosi is more accurately represented in these *Sequenzas*. The table below presents the respective *Sequenzas*, the instruments they were written for, and the years in which they were composed.

SEQUENZA	INSTRUMENT	YEAR
I	Flute	1958
II	Harp	1963
*III	Solo female voice	1966
IV	Piano	1966
V	Trombone	1966
VI	Viola	1967
VII (a) VII (b)	Oboe Soprano saxophone	1969
VIII	Violin	1976

[107] Osmond-Smith, and Earle, "Berio, Luciano."
[108] Osmond-Smith, and Earle.

IX (a) IX (b) IX (c)	Clarinet Alto saxophone Bass clarinet	1980
X	Trumpet with piano	1984
	resonance	
XI	Guitar	1988
XII	Bassoon	1995
XIII	Chanson for accordion	1995
XIV	Cello	2002

As seen on the table above, some of the *Sequenzas* were composed and arranged to be played by more than one instrument, like Sequenza XI, which initially was written for the clarinet but was later rearranged for the alto saxophone and for the bass clarinet.

3.2 Unpacking the *Sequenzas*

These virtuosic solo *Sequenzas* encapsulate many of the continuities that underpin Berio's work. They have simple motivic material as a structural element. Berio derives the musical material in a work from a single source, making use of ongoing variation processes. His concept of a sequence is similar to a tonal sequence; however, it is frequently an imprecise reproduction of the original line that keeps the original's essence.[109]

In these compositions, fixed pitch resources are investigated for their melodic and harmonic possibilities. Berio's approach to this conception changes greatly from Sequenza to Sequenza. Consider for example, the female voice piece *Sequenza III*, in which Berio goes beyond the singing voice to include various sound productions like coughing, laughing, whispering, etc. He puts it in the score using invented symbols, which he notes above or below the music. Berio explores these additional ways of producing sound and “makes them sing” through integrating them into the song. Whereas in *Sequenza XII* written for bassoon, Berio employs various registers and pushes the physical limitations of the performer using extended techniques. He explores different uses of the tongue to modify airflow by writing notes and phrases that are long and require the performer to use circular breathing, as well as producing multiple sounds by singing through the instrument while playing. [110] He pushes the boundaries of conventional playing/singing techniques.

His concentration on virtuosity in composition necessitates virtuosity from a performer in the form of sensibility and intelligence in their performance, which entail historical awareness of the

[109] Beretin, “Critical Reception,” 66.
[110] Osmond-Smith, and Earle, "Berio, Luciano."

instrument.[111] Calling for one's awareness of how the instrument operates and creates sound implies that one should be knowledgeable about their instrument's technical requirements in order to comprehend how to correctly push it beyond its limits. Which then leaves one to question if whether this could be a limiting factor for who can explore this type of music today? And if it would be appropriate for a young singer in their early years of vocal training to explore?

In contrast to the traditional virtuoso perception of an "empty-headed performer," Berio's interpretation of virtuosity in these compositions is unique. In Berio's *Sequenzas*, the performer's primary goal is to serve the composition's needs rather than merely create a thrill for the audience with flimsy displays of the technique. The virtuosity becomes an important part of the composition, in serving to create meaning rather than to separate from it. No composer has ever pursued virtuoso as seen in Berio's *Sequenzas*. [112]

Berio's intuitive scepticism of the well-rounded story matched the modernist tradition's broader notion. The artist's most pressing task is to carve a path into areas of experience for which there is no coherent story to be told.[113] In *Sequenza III*, the artist creates their own story, which must be convincing for the audience to understand and follow. This is contrary to the most performed vocal works, like operas, where the story is already given, and one must only portray what has already been given. Perhaps one might say that Berio and the performer indirectly collaborate to "bring life" to the music; the composer establishes the sound, while the performer "creates" the narrative.

These *Sequenzas* demonstrate how Berio pushes the instrument and its players to their limits; he explores 'all' noise making possibilities from each instrument. His goal with this is to create a musical commentary between the musician and hers/his instrument by disassociating different sorts of performing behaviour and then brings them back together, changed, as musical units.[114]

Consider, for example, Sequenza V (1966), written for a trombone, which demands the player to hum and vocally replicate the sound of the trombone while also playing the instrument. The impact of merging these two distinct, recognisable acts is described by Berio as a vocalisation of the instrument and instrumentalisation of the voice.[115] This is a really innovative approach to music making, a form of "glass half empty" idealism that explores the instrument's entire potential.

Nearly all of Berio's *Sequenzas* were customised for specific performers, this is a characteristic that sets them apart and one that makes it difficult for performers looking to perform these works. Take for example, *Sequenza XIV*, which Berio composed not only for Rohan de Saram but about him. Saram was a well-known cellist especially for his dedication to contemporary music. Berio was fascinated about his Sri Lankan heritage and the traditional instrument he played, which was a cylindrical drum known as the Kandyan drum. This formed the basis of Sequenza XIV, and Saram transcribed and taped the drum rhythms for Berio.[116]

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[111] Osmond-Smith, and Earle, "Berio, Luciano."

[112] Janet K. Halfyard*, Berio's Sequenzas Essays on Performance, Composition and Analysis,* (Birmingham: Routledge, 2016), p.115.

[113] Osmond-Smith, and Earle.

[114] Beretin, "Critical Reception," 66-67.

[115] Beretin, 53-55.

[116] Halfyard*, Berio's Sequenzas Essays,* 109.

Although it is not easy to identify or distinguish a particular performer from a sound of a cello being played, nonetheless Saram's personal history, heritage and specific musical interests were written into the composition, meaning a different performer would have to be aware of these things and be able to implement within their performance.[117]

The complex nature of the *Sequenzas* can lead to reluctance among some performers to tackle the music. The extensive preparation and practice needed, together with the possibility of challenges during public performances, may deter performers from engaging with these compositions. Charles Wourinen asserts that this musical style is not inherently difficult to execute; rather, the difficulty encountered by musicians stems from their traditional training, which is incongruent with the demands of contemporary music performance.[118]

Despite these challenges, many musicians are still drawn to the "*Sequenzas*" for their artistic profundity and the chance to enhance their technical repertoire. Performing these compositions can be a transforming experience, providing profound insights into the capabilities of the instruments and the expressive possibilities of music. For example, "Sequenza IX" written for saxophone and clarinet has been described as an enduring staple of the contemporary saxophone and clarinet repertoire, captivating listeners with its balance of chaos and control.[119]

Berio has garnered so much praise for these compositions from scholars. Such as Janet Halfyard, a musicologist whose research work includes works on Berio, Cathy Berberian, extended technique, and performance practice in contemporary repertoire, has given praise on the *Sequenzas* by describing them as the "paradigms of the musical literature," which are influencing the thought process of the subsequent composers on instruments and their capabilities. Similarly, Marcílio Fagner Onofre and Didier Guigueboth, both also musicologists, have described this Sequenza series as a "landmark of the twentieth-century literature" for instruments.[120]

This collective work continues to receive praise, yet in some mainstream performance spaces the *Sequenzas* continue to go uncelebrated. For example, the facilitation of "New Music" here in South Africa accomplishes little to foster musical performance engagement, and this is due to the lack of funding and an audience for the music. Though efforts continue to be made to improve the situation, it is still a long way to go for the success of this music in this country. Therefore, if one was to study this music, where would they perform it and for whom? How many performance opportunities will come from it?

For the purpose of this study, I will not be investigating all the fourteen *Sequenzas*, but I will only be focusing on one Sequenza, *Sequenza III* written for female voice. Out of all the *Sequenzas*, this is the Sequenza that closely relates to what I do as an opera student. One very important aspect of these *Sequenzas* is the challenge it poses to the technical knowledge of the artist's instrument. This pushes one to "master" their technique, and for myself this is something that as a young singer in training I see myself benefiting from in terms of the knowledge and development of my technique.

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[117] Halfyard, *Berio's Sequenzas Essays,* 109.
[118] Charles Wuorinen, "Notes on the Performance of Contemporary Music," *Perspectives of New Music* 3, no.1 (1964): 10–21. https://doi.org/10.2307/832233.
[119] Heaney, "Luciano Berio's Sequenza IX."
[120] Beretin, "Critical Reception," 259.

Berio's usage of extended techniques in *Sequenza III* pushes the vocal line composition style to its limits. This stylistic approach also presents a significant challenge to the vocalists performing the piece, as it necessitates greater maturity and control in the use of their vocal technique. Some have argued that exploring this technical style could be advantageous in sharpening one's technique.[121] This we will explore further in the following chapters.

In the following section we will commence the analytical examination of Berio's *Sequenza III*, through exploring existing literature and discussions. Lastly, through the reviewed findings, a reflective approach will also be explored.

[121] Beretin, 270-271.

SECTION B
CHAPTER 4:
Sequenza III For Female Voice

My first encounter with this piece was not love at first sight, well in this case “at first hearing”, but rather it was pure confusion and yet intrigue. Maybe it was just the sensory shock from the strange sound production I was hearing, but despite the sensory shock, there was something about this piece of music that piqued my interest. The more I listened to it, the more fascinated I became. Though I could not make out the storyline through the texts, but the drama and the music displayed by the performer[122] grabbed my attention. From the action of storytelling to the vocal exploration, and the constant changes in emotions, she turned a singular piece of music into a scene from an opera, giving a very compelling performance.

Such a performance really makes one wonder what the extent of music’s communication is and how much more it can be explored. Through the analysis of *Sequenza III* in this section, such questions will be explored through the offered understanding of *Sequenza III*’s technicality, structure, and style.

> The instrument as a voice, the voice as an instrument: the history of music in the past has always been balanced between these two poles. For certain contemporary musicians, the dilemma is not yet resolved [...] but the voice is maybe not an instrument; it is a collection of technical and expressive possibilities that one must discover every time.[123]

Through the extended techniques, composers have been able to stretch and explore the voice as a tool of communication and expression; this is also what we see Berio doing in *Sequenza III*. For Berio, though the human voice and instrumental music may share equal honours in music’s expressivity, Berio felt that the human voice plays a pivotal role in terms of both public perception and personal history.[124] Throughout Berio’s compositional career, the human voice played a significant part in his compositions. He interrogated and celebrated the human voice’s ability for complex interactions with the text, language, music, time, and memory.[125]

A crucial feature of Berio's musical style is that an instrument carries the “weight of history.” Berio contends that, in a historical context, an instrument is a “piece of musical language” that cannot be modified, destroyed, or invented.[126]

The design of Berio’s vocal line in *Sequenza III*, does not only obscure the limitation between the voice and the musical sound, but it also abandons the conventional idea of musical sound pitch

[122] A Performance given by Liesbeth Devos. Link attachment on Appendix 1, p. 63.
[123] Brady, “The Open Voice,” 47.
[124] Osmond-Smith, and Earle, "Berio, Luciano."
[125] Brady, “The Open Voice,” 332-342.
[126] Beretin, “Critical Reception,” 18.

and all the factors of all the musical sound materials concerning vocal music.[127] It is a departure from the formal conventions of classical singing.[128]

No Italian of his generation (except for Donatoni for many years) could avoid dealing with that country's lyric tradition. But, through his extraordinary collaborations with Berberian, Berio discovered a way to complicate and challenge it from within, incorporating every form of vocal behaviour that it had previously excluded. To accomplish this, he needed to develop a method of approaching the performed text that transcended conceptual distinctions between word as sign and musically structural sound.[129] In *Sequenza III*, he fragments the text into disjointed words, syllables and phonemes to obscure their primary signifying functions and instead 'mines' the words for their musical and sonic potential. He explores the notion of the voice inherent expressivity and ability to communicate intention and meaning without the aid of the words and language.[130]

When one thinks of singing, one usually thinks of a beautifully arranged vocal line, which is not what we get to hear in this piece. In this composition, using both extended technique and exploratory use of the instrument the music is written for, in this case the human voice, Berio challenges the notion of what makes up a piece of music.[131]

4.1 *Sequenza III* structure analysis

To properly dissect Berio's application of extended technique in this composition, I will break it down into different factors which include, textual structure, gestural and expressive techniques, musical elements, and performance directions. The following analysis will be brief, intended to provide an understanding of the piece's structure. Please find the full music score annexed to this essay's back in Appendix 2. Below is a short extract of the opening bars from the score as reference for what we are about to discuss in this section.

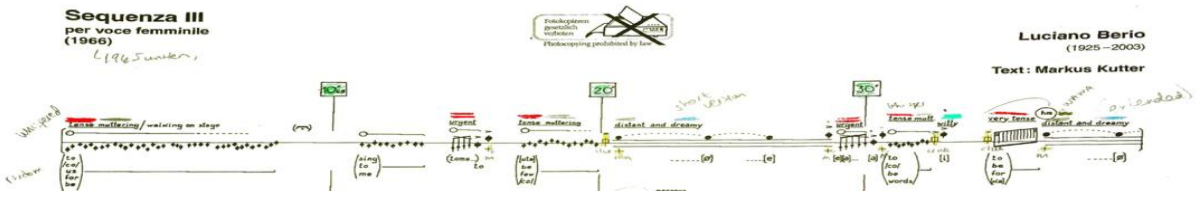

Figure 3: Vocal line, measures 1-4 of Sequenza III (Berio, 1966)

Textual structure

The following text is a poem that was written by Markus Kutter for Berio.

give me	a few words	for a woman
to sing	a truth	allowing us
to build a house	without worrying	before night comes

[127] Wei, "'Extension' and 'fusion'," 1219.
[128] Brady, "The Open Voice," 43.
[129] Osmond-Smith, and Earle, "Berio, Luciano."
[130] Brady, "The Open Voice," 44.
[131] AS Music Blog, "*Sequenza III* for Female voice - Revision Notes," May 21, 2016, accessed July 14, 2023, https://blogasmusic.wordpress.com/2016/05/21/berio-sequenza-iii-revision-notes/.

Berio explores this text by isolating phonetic elements to construct a mosaic sound patterns, as shown in figure 2, with *to, be,* and *co* markings indicated below the stave. In this way, he progressively exposes the text in broken form, contributing to the music's expressive depth. In instances when phrases and words are audible, they are disjointed; Berio separates them by interspersing other sounds. The arrangement of the text within the music is arbitrary. Through this, Berio explores the words not so much for their meaning but for their sonic and musical abilities. [132]

In presenting the text, Berio commences with phonemes: -to, for, co, be, us. Following this, he gradually introduces words and complete phrases. Berio predominantly sets the complete phrases in sung passages and throughout the composition.[133]

Halfyard asserts that in *Sequenza III*, the narrative's essence is in the tensions and differences between the singing voice and other forms of articulation. The articulations Berio employs are focused and, on the urge, to communicate in linguistic terms. Whereas, the singing voice reflects the musical aspect, expressing in more abstract terms, and frequently seems to be more reflective and inward-looking. Halfyard then asserts that the non-singing articulators could be linked more with the ideas of panic, and the singing voice is more closely linked to the ideas of calm. [134]

Berio provides two intertwined and in parallel narratives: on one hand, the need to give voice to the text, and on the hand, the battle for predominance between speech-based articulation and the singing voice.[135]

Gestural, expressive techniques, and performance direction

Berio employs a variety of vocal techniques, including speaking and whispering, coughing and laughing, singing with relative pitch, and making use of nonverbal sounds such as finger snapping. He notates these techniques with emotional indications, directing the performer through a range of expressions.

In contrast to most classical compositions, with regards to the musical directions normally given in the score, for example “legato,” “allegro,” etc., in *Sequenza III* Berio writes out precise emotional directions; for example, in the second bar, he notates "urgent" to indicate how the singer should approach that passage in the music. Neither does Berio use dynamics; it is entirely left to the performer to decide the dynamics suitable for their interpretation. [136]

Despite the differences in notation between the extended technique style and the classical style, there is some similarities to the classical style notation seen in *Sequenza III*, particularly Berio's use of ties and accents. Berio's ties, unlike classical musical notation, are written on top of the notes as dotted lines rather than connected lines, but they nonetheless serve the same purpose. And with regards to the accents, Berio uses the same symbol (**>**) found in classical notation to indicate accented notes.[137]

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[132] AS Music Blog, “Revision Notes.”

[133] Halfyard, *Berio’s Sequenzas Essays,*105.

[134] Halfyard, 107.

[135] Halfyard, 107.

[136] AS Music Blog, “Revision Notes.”

[137] AS Music Blog.

The delivery of the music is a critical component of this composition that can make or break the performer's communication with the audience. In aiding the performance deliverance, Berio gives the performer emotions to play with, such as "dreamy," "noble," and so on. In the beginning of the piece, the performer is directed to enter the stage with "intense muttering." Berio's precise emotional cues throughout the score suggest that he had a feeling of dramatic delivery in mind for when this work is performed; yet, it is important to note that this is not as underlined in Beberian's debut performance of the piece. [138]

This composition is an emotional journey, structured like a scene from an opera in one single piece, and with all the various emotions that one (both the audience and performer) experiences in a matter of seconds.[139] The music may appear improvised, but although each performance will be different, Berio gives precise directions for the music. The music necessitates a virtuoso performer.

In this composition, Berio disrupts and removes the transitional space. Convetionally, the audience applauds when the singer enters a recital performance, and the singer positions themselves and bows before beginning. However, in Sequenza III, Berio makes the performer enter the stage while already having started performing. This way, the space between the singer and character is collapsed, as she would not have been acknowledged by the audience and the confusion it creates would suggest a sense of "realness" rather than a mere performance, perhaps even getting the audience to question the performer's sanity.[140]

Musical elements

Rhythm and meter:

Berio does not transcribe the music's rhythm and meter, allowing the singer some leeway in the interpretation of the music's pacing. Though the singer may have been given some leeway in this regard, the composer has provided timed bars, with each bar lasting a duration of 10 seconds. The choice is entirely up to the singer on how to pace themselves, as long as they stay within the time limit of 10 seconds per bar.[141]

Melody:

Berio writes a melody line that is not only unpredictable but also disjunctive, and he also does not provide a key or harmony. Similarly, the tonality of the music is also unpredictable and difficult to follow; the music is written in an atonal style. In transcribing the notes, Berio uses different stave lines to guide for different pitch classes. He uses one stave line, three stave lines, and five stave lines at times; the fewer the stave lines, the more room for improvisation for the singer to determine the pitch classes for a given passage. The notes written on one stave line are spoken, while the ones written on three stave lines and five stave lines are to be sung. For the three stave lines, though the singer may choose the pitch classes, the relative register positions must be followed, the same goes for the five stave lines, however the pitch classes are determined by the position of the note on the stave. [142]

Texture:

[138] AS Music Blog, "Revision Notes."
[139] AS Music Blog.
[140] Halfyard, *Berio's Sequenzas Essays,*110.
[141] AS Music Blog.
[142] AS Music Blog.

The texture of the music is monophonic, meaning that it is a single unaccompanied 'melody' line; the conveyance of the music's meaning lies entirely on the singer. As previously discussed, Berio does not provide a time signature in the music, but rather he subdivides the music into bars of 10 seconds each, as a guide to the time and movement of the song. There are no large-scale recurring patterns in the structure of the music but small repetitions do occur, like some groups of sounds that are repeated at times.[143]

An overall observation of the score shows that Berio composed the piece using three components: the text, vocal indications, and emotional indications. Each of these components develop independently within the music, as there is no pattern or parallel relationship between them. This can be difficult for a singer learning the piece because they must anticipate and adhere to each component's development within their interpretation of the music.[144]

As we just analysed Berio's organisational structure of this composition, we saw that there are many interesting decisions that the composer made while composing this piece, which makes it so unique compared to the vocal music that one listens to or adds to their repertoire today. Perhaps one could wonder what significance or position this type of music holds in today's musical society and why is it important to know about it? In the next few chapters, we will get to explore the significance and value of this repertoire for singers today, but first let's examine the role played by "the muse" Berberian in *Sequenza III*.

4.2 Berberian and *Sequenza III*

Berberian and Berio's relationship constituted a profound and impactful artistic collaboration that greatly impacted contemporary vocal music. Berberian's remarkable vocal versatility and expressive range rendered her an ideal muse for Berio. *Sequenza III* is among Berio's groundbreaking compositions that he created to tailor to her vocal capabilities.

Their collaboration enhanced the expressive possibilities of the human voice in contemporary music. Berberian's willingness to explore with the experimental vocal techniques and her captivating stage presence were instrumental in bringing Berio's innovative compositions to life.[145]

Jennifer Paull in her book 'Cathy Berberian and Music's Musses' explores Berberian's personal characteristics and her contribution to the realisation of Berio's vocal pieces, specifically *Sequenza III*. Berberian had built a name for herself and therefore she had an audience that was always willing to listen to her. But also, in the reception of the Sequenza in the performance, Berberian's amazing vocal ability enabled a positive reception of the piece.[146] Usually, in the study of compositions, particularly works like *Sequenza III,* the contribution of the second party is often overlooked. However, in the case of this Sequenza, we have come to learn that the performer plays a critical role in communicating the composer's "intention" with the piece.

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[143] AS Music Blog.
[144] Stephanie L. Aston, "Journeys of Expression: An Examination of Four Twentieth and Twenty-First Century Vocal Works," PhD diss., (University of California, 2011), p. 32.
[145] Cedric Feys, "Berio & Berberian: more than a composer and his muse," Bozar, December 12, 2024, accessed February 14, 2025, https://www.bozar.be/en/watch-read-listen/berio-berberian-more-composer-and-his-muse.
[146] Beretin, "Critical Reception," 254-256.

4.3 Critics and literature influence on *Sequenza III*

Aside from the performer's contribution to the success of the composition, Nene Beretin argues the critics play an important role in launching a composer's career and maintaining public support. Critics serve as liaisons between the composer and the general public. [147]

For such modern works as *Sequenza III*, because of their unorthodox structure, critics tend to focus on the descriptive commentary for their assessments rather than evaluating the work within conceptual parameters. This takes away from providing a true understanding of the music but rather offers a subjective review.[148]

The current publicly accessible literature that has been written on *Sequenza III*, most offers descriptive commentary of the piece rather than analytical evaluation. During my literature search for this dissertation, I encountered a number of descriptive literature, and most of the analytical literature that I found was not easily accessible (to the general public), in a sense that it either required one to gain access through a third party, like an institution, or pay for subscription or make a purchase to gain access.[149] Most of the publicly open literature were research studies by either Masters' students or PhD students.

Seeing this I began to question if whether the lack of publicly accessible analytical literature plays a partial role in the reason there is no huge public interest to this work today. People who develop an interest in this music will encounter descriptive literature that does not provide a clear grasp of the composer's intention with the music. I was a singer looking to study this piece and was unable to locate resources to help me understand it, as well as how to approach it, I would be discouraged and probably give up on the piece.

Therefore, the role of good publicly accessible analytical literature is quite important, especially for compositions like *Sequenza III*, with a style that is not familiar to the ordinary ear.

4.4 An opera singer perspective

My fascination to explore this piece of music originates from my background as a classical singer in training, in search of methods or ways to develop my vocal technical abilities. And from what we have gotten to understand about *Sequenza III*, the vocal technicality aspect is a crucial part in the performance of the piece. And maybe through one attempting a piece like this, the technically challenging aspect of the piece will push one to work and improve their vocal technique.

In my years of vocal training, teachers have often advised on picking repertoire that will challenge the vocal technical aspects that you struggle with, so when learning the music, you can use that as an opportunity to improve on what you struggle with. In my language we have an idiom that says *"Iva likhishwa ngeva"* which translates to "you remove a thorn by a thorn"; this speaks to dealing with a situation head on, through its difficulties, which is the very essence with vocal technique, "there is no easier way around it."

Sequenza III as a piece, challenges all aspects of vocal technique, from managing the transitions between different registers to challenging agility and pitching, etc. For example, the extract below

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[147] Beretin, 324-326.

[148] Beretin, "Critical Reception," 322-323.

[149] Some of these analytical sources include, Chapter: Transforming analytical assumptions, What is Sequenza III? (from Book: Singers, Scores and Sounds); and Book: Berio's *Sequenzas*.

of a few bars from the score shows a fast-moving passage, which would require one to have good agility control in order to get through the passage. Agility control is when one can move quickly and easily through the notes, while being able to articulate each note and text. A technique like this one is not something that comes easily but it takes years and years of training to “master.”

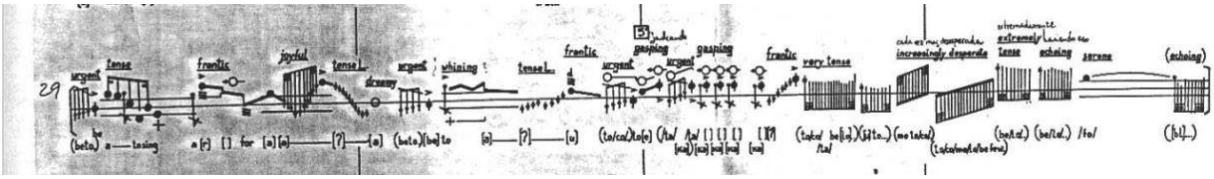

Figure 4: Vocal line, measures 29-32 of Sequenza III (Berio, 1966)

Though also while it may be beneficial to explore this music, exploring such vocally challenging music on your own without guidance of a vocal trainer on the application of the technique can result in vocal damage, which is why there have been other critics who have posed a question of whether this is a piece to be explored by vocally and technically matured singers rather than younger singers.

The other aspect to consider is with regards to the drama required to be presented when performing the piece, from following the composer’s dramatic directions and inputting own dramatic decisions. This is another aspect that might require a level of maturity, as the saying goes “experience is the best teacher,'' meaning that with experience comes better wisdom of understanding and expressing emotions, something that a younger singer might struggle with because of their lack of experience.

Similarly, in the classical repertoire, there are pieces that a younger singer may be advised against in singing until they get to a later age. In most cases it is not because one does not have the technical means to sing that specific music, but it is more so because of the lack of emotional intelligence at that age from not having “life experience.” For example, *Senza mamma* from an opera called *Sour Angelica* by Puccini, is a piece of music which I have always liked and wanted to sing. The storyline of the music is about a mother grieving the loss of her child which she had to give away soon after she gave birth. This music had always fascinated me, and so in my second year of my degree, I learnt it and took it to my vocal coach session, and although I could sing it note to note, expressing it was a challenge because I had never been through such a great pain or even understood what that would feel like. Even through my “emotional acting,” I could not express the true expressivity of the music. My vocal coach advised me against it at the time and said I needed to first grow and experience things before I could attempt it again, so that I can sing it with true emotions. This is not just advice from my vocal coach, but it is advice that one hears a lot from vocal lecturers and even older singers, and also in the space of international opera competitions from the judging panels.

CHAPTER 5: Analytic and Technical Study of *Sequenza III*

There have been numerous studies conducted on Berio's stylistic approach in this body of work of the *Sequenzas* and specifically with *Sequenza III for female voice*. These studies have been an attempt to either provide an overview or to provide an understanding of the style, approach and meaning.

The focus of this chapter is to evaluate some of the studies and their findings, with the aim of providing a technical understanding of the style to aid with a way of approach for singers looking to explore this work. And also, through understanding the pros and cons of studying this work, the answer for its capability as a training tool will be discovered.

The table below consists of examples (in no order) of some of the studies that have been conducted on *Sequenza III*. For the sake of showing the importance of the critics and literature influence as stated by Beretin, the examples listed below have been chosen based on them being publicly accessible in the search of *Sequenza III*.

AUTHOR	TITLE OF PAPER	PUBLICATION DATE
1. Patti Yvonne Edwards	Luciano Berio's *Sequenza III*: The use of vocal gesture and the genre of the mad scene	August 2004
2. Megan Aileen Johnson	Listening to Luciano Berio's *Sequenza III:* A Multi-Perspective Examination of the Singer's Embodied Experience	2013
3. Stephanie Lynn Aston	Journeys of Expression: An Examination of Four Twentieth and Twenty-First Century Vocal Works	2011
4. Marinella Ramazzotti	Luciano Berio's *Sequenza III*: From Electronic Modulation to Extended Vocal Technique	2010
5. Clare Brady	The Open Voice: Vocality and Listening in three operas by Luciano Berio	February 2017
6. Luciano Berio *(from Centro studi Luciano Berio*)	*Sequenza III* (author's note)	
7. Classic FM	Is this the most bizarre and	6 January 2017

	technically difficult piece of vocal music ever written?	
8. Robert Kirzinger	Luciano Berio *Sequenza III*, for voice	
9. Valentina Radoman	A new sound and anticipation of unimaginable reality - *Sequenza III* by Luciano Berio	31 December 2021
10. Elisa De Toffol	La practica degli affetti - The practice of affections	25 May 2020
11. Mary Bonhag	Exploring Virtuosity	24 April 2018

As specified above, these sources were picked based on their accessibility to the public. The reason for this is to show and highlight the significance of literature material in growing sustainable knowledge and interest about the topic at hand, in this case being *Sequenza III*. Below we will discuss more on the critics' influence as well as analyse some of the sources listed above.

5.1 Critics' influence: Developing an interest in *Sequenza III*

Though critics' influence is not so much the focus for this chapter, it is important to highlight the significant part it plays within the success of the music by connecting the audience to the composer's intention, by providing an understanding.

As stated above, the criteria for the examples above was based on them being publicly accessible sources in the search for *Sequenza III* literature. In the previous chapter we briefly discussed Beretin's statement on the influence of critics or rather lack of, when it comes to the aspect of helping "admirers" of the music to become knowledgeable about the composer's intention, in a sense liaising the composer's work to the general public. The approach we witness with most of the above listed sources takes away from the understanding of the composer's intention and the "true message" with this composition, but it instead highlights what is already obvious to many, "the outside appearance/reception" of the composition, offering descriptive commentary.

For example, Classic FM[150], one of the largest radio networks in the UK with over 6 million classical music listeners, published a rather uninformative piece about Berio's *Sequrenza III*, describing the music as "bizzare." As a network dedicated to promoting classical music, this piece did not aid in promoting readers' knowledge of this music, but rather focused on sharing the writer's own experience. Giving rather descriptive commentary.

This type of literature offers an understanding that is mainly subjective to the perception of the author, rather than the composer. Which would pose a problem if someone had an interest in learning the song for a performance, as not much guidance will be offered by the existing literature.

[150] Upon recent review this article has been now been removed from the website.

Though I must add that for most of the good analytical literature that is amongst the above-mentioned sources, many came from research papers written by Masters' and PhD students. Perhaps this is one way on improving the critic's influence on such unorthodox music as *Sequenza III*. This also goes to show that there is an interest developing in this style of music among music students, but its inaccessibility within the public domain makes it difficult for more people to show interest in studying it, let alone performing it. It is crucial to emphasise that the current challenges with accessibility are due to copyright restrictions, as *Sequenza III* falls under contemporary works. Given the current restrictions, could academic literature be a way to improving this issue and facilitating a growing audience for this type of music?

So therefore, in agreement with Beretin, literature plays a pivotal role in the successful reception of compositions. Though as previously stated, for this study the focus is not so much on the critic's influence, but the role that this plays in the understanding and growing the understanding of *Sequenza III* is all so important not to mention.

In order to build an audience, it is important that we create better and easier ways of expanding knowledge on the subject. In this following section we will analyse some of the above-mentioned studies and look at how the discussion aiding with the understanding of this composition was presented.

5.2 An analysis of the chosen literature

Presented on the table below, are the scholars whose works we will be assessing, Megan Aileen Johnson, Stephanie Lynn Aston, and Mary Bonhag, including the focus of their papers.

AUTHOR	OCCUPATION	PAPER FOCUS
Megan Aileen Johnson	Singer, Performance studies scholar and Research facilitator	Embodied experience
Stephanie Lynn Aston	Singer, Contemporary Music specialist and Voice Lecturer	Proposed approach to studying the piece
Mary Bonhag	Singer, Contemporary Music specialist and Vocal Teacher	An approach of the singer who was learning the piece to perform it

These works have been meticulously chosen for their "trained-singer" perspective and their approaches, which are in close alignment with the analytical study approach on the Sequenza. First, we will examine the summaries of each study. Later, we will explore how these studies contribute to our comprehension of the work, as well as provide theoretical and technical guidelines for analysing this work.

Megan Aileen Johnson

A performer's musical embodied experience should be considered as an equally important aspect in music scholarship. Johnson argues that a performer's embodied experience can serve to

provide a deep insight into the music's meaning as well as, it can be a great resource for helping with developing the musical meaning. This approach by Johnson considers the body of the performer as not only a contributor to the sound production but as playing a fundamental role in the creation of the musical meaning. Johnson states, "The sensations and experiences of the body during the process of creating music can lead to the recognition of important moments and fundamental meanings within a musical work."[151]

In her journey of exploring the body communication theory, Johnson further investigates the connection between a singer's embodied musical experience and a musical interpretation grasped by the musical receiver in relation to *Sequenza III*. Johnson bases her search for this understanding through the use of the theoretical perspective of Mark Johnson, who claims that human experience and the knowledge of the world develops from our embodied nature. Below is a quote Johnson references from M. Johnson which explains his theoretical perspective further.

> Music is meaningful in specific ways that some language cannot be, but it shares in the general embodiment of meaning that underlies all forms of symbolic expressions, including gesture, body language, ritual, spoken words, visual communication, etc. Thinking about how music moves us is not going to explain everything we need to know about language, but it is an excellent place to begin to understand how all meaning emerges in the flesh, blood and bone of our embodied experience.[152]

Johnson explains that not every performer or every listener will apprehend the same meaning or understanding of the piece, therefore her aim is not to export a universalised musical experience but rather to show how embodiment is an important component of understanding music and that the universal nature of embodiment will therefore allow for a thread of similarity throughout the musical experiences.[153]

Johnson then proceeds to investigate three recordings of different interpretations of *Sequenza III* to prove her theoretical claim, the recordings of Berberian, Castellani and Schadeberg. She investigates expressive devices, such as dynamics, articulation, the vocal quality, the speed of vocal gestures, the intensity of the voice, the pitch, and the range of the voice. Johnson investigates using these devices because she states they denote certain parameters of expression that communicate narrative and expressive information to the listener.[154]

In this study, Johnson bases her theorisation on the shared experience in embodiment therefore making it possible to empathize the embodied experience of one singer to another. She points out that the interpretations are all different in their own ways, as this is a result of each singer's somatic experience as they create music.[155]

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[151] Megan A. Johnson, "Listening to Luciano Berio's Sequenza III: A Multi-peíspective Examination of the Singeí's Embodied Expeíience," Masteís diss., (Univeísity of Ottawa, 2013), p. ii.

[152] Johnson, "Listening to Luciano Berio's," 148.

[153] Johnson, 152.

[154] Johnson, 164.

[155] Johnson, 171.

Berberian maintains a technical approach to many of the musical passages, which allows her voice to function freely and naturally. Johnson claims that for Berberian to create vocal effects, like breathiness, she would have to alter her physicality in a way that it affects her vocal production. She also compares her embodied experience to that of a singer singing a traditional *bel canto* repertoire, because she remained physically calm and neutral in the performance. In developing tension, instead of using vocal effects, Berberian uses a technical approach by focusing her vocal tone; making her vocal quality become more concentrated, clearer, and slightly louder with the build-up of the tension.[156]

Whereas Schadeberg uses vocal effects in order to narratively communicate the music. During the performance, the body is not necessarily used to facilitate the vocal technique but rather it is mostly used to communicate the dramatic and emotional experience of the character portrayed. For the listener, this performance would be more emotionally engaging, through all the experiences, therefore contributing to the intensity of the performance.[157] Schadeberg's utilisation of the body for dramatic effect enhances the audience's experience of the performance, in contrast to a scenario where the audience solely relies on just listening.

Castellani's interpretation and embodied experience shares similarities with both interpretations of Berberian and Schadeberg. She frequently uses manipulations of the vocal quality, such as nasal sounds, breathiness in the voice, etc, as methods of communication. The vocal manipulations of Castellani are still within the vicinity of controlled vocal technique, rather than through the use of external components, such as the throat, jaw, etc. Johnson therefore states that Castellani's somatic experience involves the maneuvering of these different mechanisms, and perhaps producing a less grounded embodied experience of the piece. Castellani also makes use of vocal gestures to communicate a narrative and engage the listener.[158]

The body and embodied experience of the singer affects their vocal production. This connection is one that is really crucial when it comes to creating music, but it is also one that is not well acknowledged in literature of music performance.[159]

Johnson concludes by stating that it is important to explore the embodied experience in musical performance, as its understanding may bring new and exciting insights into both contemporary and traditional music.[160]

Stephanie Lynn Aston

Sequenza III is one of the pieces that is popular amongst twentieth-century works written for voice that employ extended techniques. The piece requires a singer to follow multiple musical directions simultaneously, such as the alternations between speech and song; the pitch variation; emotional indications on the score; the timbre modifications; the articulation of the rhythm; as well as the mouth articulation or syllable variation.[161]

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[156] Johnson, "Listening to Luciano Berio's," 172.
[157] Johnson, 172.
[158] Johnson, 173.
[159] Johnson, 175.
[160] Johnson, 175.
[161] Aston, "Journeys of Expression," 30.

Besides the fact that Berio wrote *Sequenza III* specifically to cater for the voice of Berberian, he also wanted to explore the full range of the voice's ability to expressively communicate, indifferent to the everyday uses of the voice in Classical singing.[162]

Aston writes that though he would suggest for any singer attempting to learn this piece to first listen to the studio recording and live recording of Berberian singing it, he also adds that listening to other recordings of other singers might be beneficial in helping the singer develop their own text interpretation through the inspiration of the various interpretations.[163] This step is also an advisable step in the learning of the standard Classical repertoire, for singers to listen to different interpretations in order to be inspired for their own interpretation; we see this normally with music that has long passages of improvised coloratura cadenzas.

The composer himself does encourage experimentation in interpretation of the emotional indications and story development. Some scholars who have studied the piece have even gone out to indicate that the cues given by Berio in the score do not matter that much to be followed, but rather one should aim to make the performance make sense to them. A viewpoint Aston seemingly does not side with.[164]

Aston goes on to state that the interpretation must be in accordance with the score and "dramaturgy" of the one performing it. He also adds that because Berio had stated that *Sequenza III* was inspired and written for Berberian's voice, Berberian's interpretation should serve as the foundation or point of departure for every singer intending to learn and perform this piece. Aston then states that only then can one start exploring their own way of interpreting the piece.[165]

Aston goes on to propose guidelines to help with the approach of learning the piece. For example, when it comes to the 10 seconds time measures set out by Berio in the music, Aston proposes that in order to keep the time, instead of a singer marking beats, they should rather use a stopwatch as a reminder of the duration. This will allow room for free interpretation in terms of movement with the notes in between, as well as also helping the singer with getting used to the feel of the spacing of the sound patterns within the measured time. It is important to note that this is only for practice purposes.[166]

Also, in observation of the extended technique related to timbre modifiers that Berio uses in the music, such as quivering jaw, placing of hands on the mouth, breathy tones, etc, Aston advises some cautions in approach for singers. Especially when it comes to ones that require the function of the vocal cords, Aston advises that it is done in a healthful manner. For example, when creating the breathy tones, one should use only a small extra amount of air to create the sound rather than using too much which can result in drying out and tiring the vocal folds.[167]

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[162] Aston, "Journeys of Expression," 30.
[163] Aston, 30.
[164] Aston, 31.
[165] Aston, 31.
[166] Aston, 35.
[167] Aston, 43.

Aston concludes by stating that he would advise any singer performing this piece to not make their interpretation too clear to keep the idea of ambiguity that Berio had intended with the piece. Aston claims that Berio with *Sequenza III* created a musical work that invites the listener to explore their own imagination for interpretation; he did what the painters and poets do with their own medium.[168]

Mary Bonhag

> The voice carries always an excess of connotations, whatever it is doing. From the grossest of noises to the most delicate of singing, the voice always means something, always refers beyond itself and creates a huge range of associations. In *Sequenza III*, I tried to assimilate many aspects of everyday vocal life, including trivial ones, without losing intermediate levels or indeed normal singing.[169]

As she prepared to perform *Sequenza III*, Bonhag conducted a study. In her investigation of the text, she states that Berio separated the sounds of each word from the meaning and the word itself, then inserted his own direction into the interpretation of each word because he was curious about how the sound of words could contribute to the meaning attached to them. This makes it more difficult for the listener to recognize the words, but he provides enough hints to keep the connection of the text to the poem.[170]

Bonhag states that to help with her learning process of this piece she used a colour coded system on the score to help keep track of the quick changes in emotional state or vocal intentions. For example, in interpreting the emotional indications, she coloured the high intensity emotions like 'desperate' and 'intense' with the colour red. Whereas for mellow emotions like 'dreamy' and 'wistful,' she gave them the colour blue. Using this system helped her 'think ahead' whilst reading the score.

She also expresses the challenge she faced with learning the symbols that Berio uses in the score for a cough, tapping of the mouth, finger snaps, etc. The challenge she faced with these was with memorisation and knowing them well enough to be able to recognise them instantly in the music as she goes through it. This she explains took a very long time but became fun once she "mastered" it.[171]

Bonhag also explains that for some time she struggled with motivating herself to learn the music because of the physical and technical challenges it posed, as well as the fear and vulnerability of singing unaccompanied, the expectation that comes with performing a piece like this as it carries great importance in the history of vocal music. She explains that it took her a couple of years to properly and thoroughly learn the piece; that is with the in-between breaks included.

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[168] Aston, "Journeys of Expression," 47.

[169] Centro studi: Luciano Berio, "*Sequenza III* (author's note)," accessed October 11, 2023, http://www.lucianoberio.org/node/1460?1487325698=.

[170] Mary Bonhag, "Exploring virtuosity," *Scrag mountain music Blog*, April 24, 2018, accessed March 23, http://www.scíagmountainmusic.oíg/blog/luciano-beíios-sequenza-iii-foí-voice.

[171] Bonhag, "Exploring virtuosity."

Berio states that *Sequenza III* is a "dramatic essay whose story is between the soloist and her own voice." A statement which Bonhag claims could be terrifying or disastrous because each singer could make the interpretation so personal that it becomes unrecognisable, or “too unique”, as each person can interpret certain instructions like ‘nervous,’ ‘dream,’ ‘wistful,’ etc, differently. But also, on the other hand Bonhag claims that it could also be liberating.[172]

Sequenza III in comparison to the repertoire mostly sung today, does not carry an expectation of how it will be sung or portrayed. One can create their own meaning in a way that best suits their own strength in vocal ability and dramatic expression.

Bonhag concludes by saying that while the piece may appear difficult and frightening at first, once one “masters” it, the process becomes humorous and enjoyable. She suggests approaching the piece with a playful mind, experimenting with the voice, words, and emotions.[173]

Conclusion

These three studies provide an analytical insight into the understanding of work and approach, each in their own way. For instance, Johnson’s focus is mostly the performance delivery, in the dramatical aspect. Through an evaluation and comparison of three performances, she goes on to conclude that the focus on embodied experience within a performance is far more important than dwelling too much on the vocal technical aspect. This way, one is able to grab the attention of the audience and keep them emotionally engaged in the performance. But Johnson, also shares that one can also maybe focus on the delivery of both the dramatic aspect and the vocal technical aspect. Though this performance may not have that much impact, it is a better way to ensure that one does damage their voice.

On the other hand, both Aston and Bonhag within their studies focus on the theoretical aspect of how this work can be approached and the preparations required. Though for Aston there are more suggestions of how this can be done, Bonhag writes based on her experience with studying this music to perform it.

In addition to the vocal technical approach that Aston suggest, he also states the importance of using Berberian’s interpretation of the piece as a foundation from which every singer looking to study the piece must start from. Aston also encourages listening to different interpretations in order to help guide one’s own interpretation of the piece.

Whereas for Bonhag, one gets a (first-hand) review on the challenges that may be posed by studying this work, she also offers solutions for them. This study also helps anyone looking to learn the work know what to expect and how to prepare.

Through these studies one gets to understand to an extant what it takes to learn this work and what it takes to be able to perform it. For many of the practical suggestions that have been made, I find myself in agreement with them, as they offer a clear guide to learning the work.

Now that we have briefly discussed the technical and dramatical challenges posed by studying this work on the performer, below we will discuss how these challenges can be used as a positive

[172] Bonhag, “Exploring virtuosity.”
[173] Bonhag.

tool in the development of vocal technique and dramatical presentation aspects for younger singers in training.

CHAPTER 6: “Antidote” for Vocal Technique

According to Berio, the voice possesses a significantly greater capacity than simply generating pleasing tunes. In *Sequenza III*, he thoroughly investigates the voice's complete range of expressive and communicative potential. This phenomenon is also evident in the other *Sequenzas*, where the composer delves into a distinctive sonic environment by employing unconventional techniques specific to each instrument. It is as if he is completely reinventing the concept of music “creation.”

Before examining what parts of this piece may make it a possible antidote for singing technique and vocal health, let us first look at what is meant by the term in this context. The word “antidote”, as defined in the Oxford dictionary, refers to a medicinal remedy used as a counteragent. In this context, the question is whether *Sequenza III*’s extended techniques can operate as a counteragent to vocal technical difficulties that singers frequently encounter and develop.

To better understand the implications or benefits that this technique has on one's voice, we will look at the advantages and disadvantages that studying and performing this work can have on a performer, as well as how these factors can either contribute to or hinder the development of a singer's vocal technique, determining the ability to act as an antidote.

6.1 Advantages and Disadvantages

This section will examine some of the aspects that were addressed in the study reviews discussed in section 5.1. These are the major aspects that we will look at, vocal technical aspects, freedom of music's interpretation/performance, and the duration period for learning the repertoire. These aspects will be examined to assess their pros and cons to gain a deeper understanding of how this work can be beneficial or pose implications if used as a tool for vocal training and development for young singers, and to understand how this can be integrated.

While the majority of this paper has focused solely on the technical challenges faced by classically trained singers in relation to *Sequenza III*, it is worth noting that non-trained singers also engage in this work. Unlike most classical vocal compositions, this work is not considered to demand extensive use of traditional classical technique. However, in the interest of this research and to reflect on my own technical experience in relation to my classical training, the primary emphasis will be on the expertise of classically trained singers.

These advantages and disadvantages will now be discussed below.

Advantages:

- <u>Vocal growth/Technique</u>
  Looking at the technical aspect commanded by Berio in the music, the singer is forced through different motions in a short span of time, requiring different tone colour changes of the voice. For one to be able to properly adhere to these commands, it would really take a lot of control and discipline in one’s vocal technique. From these challenges posed by the music, in the process of learning and preparing the music, these challenges could serve the purpose of being sharpening tools for one’s vocal technical skill. Berio challenges the different elements of vocal technique throughout the piece.

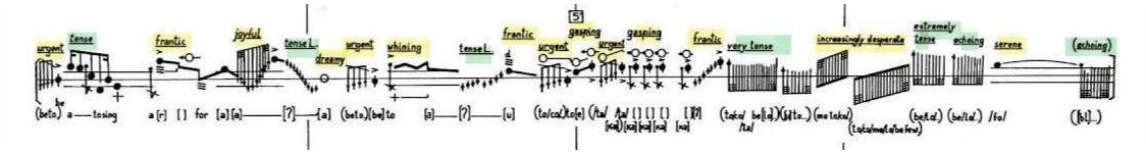

Figure 4: Vocal line, measures 29-32 of Sequenza III (Berio, 1966)

Take for example this passage taken from the second page, on the fourth line in the score. In this passage Berio notes many vocal actions, facial and bodily gestures and fast-moving rhythms. A passage like this will require one to be more flexible/agilE in their vocality for these fast-moving rhythms, as well as adapt quickly to change, jumping between spoken texts and sung texts, and lastly, one will have to be quite comfortable in their technique, in order to be able to create smooth transitions and merging of the vocal actions, like the screams, laughter, with the “singing.”

For one to be able to convincingly execute such a passage, it will take much practice and repetition, and it is through this process that one can train and develop within these vocal technical elements.

> We should be able to move the sound, making it sometimes more transparent, sometimes more aggressive, muffled or present...The sound instrument must be more flexible…Because this rigidity is responsible for certain aspects of current vocal technique.[174]

- Free interpretation/performance

  The flexibility of interpretation granted by Berio can be beneficial because it permits one to “arrange” and interpret the music in a manner that complements their vocal prowess and dramatic response capabilities, thereby enabling them to highlight their finest attributes. Contrary to the conventional classical repertoire, which adheres to predetermined storylines and notations that must be strictly adhered to, *Sequenza III* grants the singer the freedom to make all decisions in a manner that optimally suits them.

  Berio does not restrict the imagination and creativity of the performer in any way; rather, he actively promotes and supports it. As Aston mentioned, Berio encourages individuals to delve into their own imagination when engaging with the composition.

Disadvantages:

- Vocal damage/production implication

  As mentioned by Aston earlier, Berio's composition includes vocal modifications that singers must be vigilant about and execute with caution, as improper technique can result in vocal harm. A few examples of these vocal modifiers are whispered sounds, coughs, breathy tones, tremolos, and so on. Neglecting to employ the appropriate technique while employing these vocal modifiers may result in vocal fatigue and/or damage.

  Berio also employs vocal modifier cues in the score that, if executed incorrectly, can lead to implications in vocal production and projection, potentially impacting the audience's perception of one's performance. Examples of these modifiers encompass cues such as

[174] Albera and Demierre, In *Revue Contrechamps n° 1*, 8.

"singing with closed lips", "tapping the hand over the mouth", "singing with the hand covering the mouth", and similar actions.

Berio is aware of the potential ramifications that can arise from certain cues if executed with technical errors. As a result, in the score, he offers the following instruction as a directive on how one should approach and interpret the cues in the score.

> The performer, however, must not try to represent or pantomime tension, urgency, distance or dreaminess but must let these cues act as a spontaneous conditioning factor to her vocal action (mainly the colour, stress and intonation aspect) and body attitudes.[175]

Furthermore, the technical intricacy of the music necessitates proficiency in extended approaches, which will require time to refine.

- Free interpretation/performance

  While this characteristic is predominantly favourable, it may have disadvantages if not carefully implemented. Despite the significant flexibility that Berio grants for the interpretation of the score, hasty interpretations may result in renditions that are unrecognisable in comparison to the intended sound of the composition. According to Bonhag, this could potentially result in a disastrous outcome.

  Furthermore, Berio's emphasis on virtuosity in this composition necessitates the performer to possess exceptional skill and expertise in order to deliver a knowledgeable and intelligent performance. The singer must not only understand the composer's intentions, but also have a deep awareness of their own instrument. Achieving an ideal balance between vocal experimentation and sustaining a cohesive performance can be challenging.

- Learning Period

  Learning this piece requires more time compared to typical classical repertoire due to performers' unfamiliarity with the style and the music complexity. As a result, it will take additional time to internalise the music for a performance. It took Bonhag a few years to learn the music due to its complexity, as there were times when she lacked the motivation to practice. Difficulties with even a single passage in tonal repertoire can be discouraging and ultimately delay the learning process; how much more so will this particular style of music create an even greater challenge?

  Bonhag expresses difficulties in memorising musical symbols and the need to quickly recognise them while singing from a musical score. Additionally, one must eventually begin memorising the entire score in order to perform it by heart; this is not a simple task, as the musical structure is unpredictable. Based on our discussion, I would estimate that it would take at least one year, if not longer, to learn this music sufficiently for a performance.

[175] Appendix 2, pg 66.

These are merely a few of the benefits and drawbacks associated with mastering this particular piece of music. Taking into consideration the points that have been discussed thus far, one can already begin to speculate about the manner in which the implementation of this work into vocal training could be carried out in a way that would minimise the negative aspects and build more on the positive aspects, by counteracting the technical challenges and difficulties in a training stage. Below, we will go into further detail regarding the possibility of that happening.

6.2 Counteragent: Early Repertoire Introduction

From the discussion above, we have come to comprehend that due to the intricate nature of this music, it is not recommended for young and vocally inexperienced singers to undertake this piece due to its demanding requirements. Suppose I was to suggest that there could be a method through which young and inexperienced singers could engage with this piece, not of course with the intention of staging a performance, but rather to enhance their vocal technique? How can that be accomplished? Let us proceed with the discussion below.

In institutions, it is very common for vocal teachers to recommend technically challenging pieces for their students in order to help them train a certain skill in their technique. For example, myself I am currently working through fast paced and short-noted music to train my technical skill for agility and support. In addition to this method, there are also specific vocal exercises teachers do with their students, using them as training tools to “stretch” the vocal ability of their students. The exercises are structured to target specific “problem areas” for the students, such as intonation, vocal agility, legato singing style, and others.

Therefore, given the technical challenges posed by *Sequenza III*, can it be utilised in the same way as a tool for vocal technique training? In classical vocal training, there are exercises known as “vocalises” which are song-like structure and 2-4 pages long, which are used to target different technical aspects. *Sequenza III* could possibly be utilised as a “vocalise”, maybe divided into small segments due to its complexity. It would be advisable to participate in this learning process with a vocal coach to effectively enhance various aspects of vocal technique and minimise the risk of vocal misuse.

In a study conducted by Marco Guzman and his colleagues, they used “Vocal function exercises” (VFE’s) on a group of trained singers to observe the benefits it could have on their technical abilities. The VFE’s are typically employed by speech therapists on their patients to aid in strengthening and rebalancing the subsystems for speech, which includes the phonatory subsystem, respiratory subsystem, and nasal and oral resonance. These exercises are not focused on “singing” but rather training the muscles. The results of this study proved a positive outcome for the focus group of singers who used these exercises after the 10 week study period.[176]

Although VFE's are predominantly therapeutic exercises designed to restore and sustain optimal vocal function, they exhibit parallels in their operation to extended approaches. Both approaches

[176] Marco Guzman, Vrushali Angadi, Daniel Croake, Christopher Catalan, Constanza Romero, Gabriela Acuña, Camilo Quezada, Richard Andreatta, and Joseph Stemple, “Does a Systematic Vocal Exercise Program Enhance the Physiologic Range of Voice Production in Classical Singing Graduate-Level Students?” *Journal of Speech, Language & Hearing Research* 63, no. 4 (April 1, 2020): 1044–52, doi:10.1044/2020_JSLHR-19-00362.

develop and engage vocal muscles, broaden and explore singers' vocal abilities, and enhance the singer's expressive range.

Therefore, the extended techniques employed by Berio can serve a similar positive outcome for vocal development. The question now is, where and when can this implementation occur? Because of the intricate nature of the music, perhaps it would advisable for singers who are at least 21 years old or those in their third year of vocal studies to be granted permission to utilise *Sequenza III* as a training tool, as the voice would have matured more by then. At this stage, they would have also begun to somewhat comprehend the basics of vocal technique.

I feel that it is important to note that the proposition of using *Sequenza III* to teach the skill of vocal technicality to young singers is in no way to disregard the existing methods of teaching technique, but rather to offer a different perspective of how technique could be taught in a way that builds a more secure understanding of one's vocal technique in its entirety and also give necessary training to singers who want to explore new music. This would enhance the appeal and attract a greater number of vocalists who delve into this type of music. There would be a rise in performances for extended technique music and modern music.

The development of technique is crucial, particularly in classical singing. A strong understanding of vocal technique is essential for a successful and enduring career in this field. Performing classical repertoire with poor technique can be comparable to repeatedly scraping your vocal cords with steel wool. Over time, this can lead to permanent vocal damage, potentially ending one's career abruptly. Several renowned opera singers have faced a similar situation to the famous soprano Amelita Galli-Curci, who experienced a superior laryngeal nerve injury due to tension while producing high-pitched notes as a coloratura[177] soprano.[178] Luciano Pavarotti, a renowned tenor, became well-known for his vocal nodules caused by the incorrect application of vocal technique, which led to excessive strain on his voice during singing. [179]

Thus, utilising Sequenza III as a training tool can potentially enhance the pedagogical approaches for imparting vocal technique, thereby reducing the risk of vocal harm among young singers.

Though it is crucial for the singer to be very much aware of their instrument, it is also very crucial for vocal teachers facilitating singers to be very knowledgeable in vocal technique and have a good ear to listen and diagnose when a problem arise. Cora-Mari van Vuuren states the following:

> The singing teacher has a tremendous responsibility regarding the diagnosis of a vocal fault, as he or she must to be able to identify specific symptoms.

[177] A light soprano that can sing very high notes, going to F# (and sometimes above) above 'Top C.'

[178] Rosario Marchese-Ragona, Domenico A. Restivo, Ioannis Mylonakis, Giancarlo Ottaviano, Alessandro Martini, Robert T. Sataloff, and Alberto Staffieri, "The superior laryngeal nerve injury of a famous soprano, Amelita Galli-Curci," *Acta otorhinolaryngologica Italica: organo ufficiale della Societa italiana di otorinolaringologia e chirurgia cervico-facciale* 33, no. 1 (2013): 67-71, accessed November 12, 2022, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3631811/.

[179] Wikipedia contributors, "Oversinging," Wikipedia: The Free Encyclopedia, accessed September 21, 2022, https://en.wikipedia.org/w/index.php?title=Oversinging&oldid=1234409458.

> To be able to determine the cause of each vocal fault, the teacher must have a thorough understanding of how sound is produced...[180]

Implementing the early repertoire as a training tool, necessitates that both students and teachers possess substantial knowledge. Therefore, with more pedagogical studies regarding extended techniques and their benefits can aid in the integration of this training method in vocal training institutions.

[180] Cora-Mari van Vuuren, "Exploring the Diagnosis and Correction of Vocal Faults Encountered during the Training of the Classical Singing Voice," Order No. 30709425, University of Pretoria (South Africa), 2017, http://ezproxy.uct.ac.za/login?url=https://www.proquest.com/dissertations-theses/exploring-diagnosis-correction-vocal-faults/docview/2901491797/se-2.

CHAPTER 7:
Conclusion and Direction for future research

The present study sought to investigate the extended techniques employed by Berio in his composition *Sequenza III*, as well as explore it as means of vocal health solutions. The objectives were to comprehend the composer's intentions, analyse the performance approach necessary for this composition style, and evaluate the relevance of singers exploring it in contemporary times.

For centuries, vocalisation has been a crucial element of musical performance. Berio's compositions have placed significant emphasis on the human voice. Throughout his career, as we previously discussed, he exhibited a wide range of techniques, settings, and approaches in his vocal compositions. Berio sought to investigate the potential of the human voice to convey emotions and facilitate communication in a manner that surpassed conveyance of meaning through text, as seen in *Sequenza III*. This being prompted by his sudden interest in linguistics at the time; the need to want to understand the connection between music and language.

This urge for Berio to explore music making in this manner may have been the closest to the utilisation of music in its purest form. The strategies of extended technique are based on the use of a pure, natural voice; a voice that is not made to "sing" but to produce sounds in its natural state. This type of singing Leonard has labelled it as "primitive" for its focus on the voice as an expressive tool unrestricted by language.[181] Rousseau also states that this primitive state encourages virtuosity and help to connect one to their instincts.[182] Therefore, the exploration of voice in the instinctual way is it not healthier than the "manufacturing" of sound? Could this approach within singing not aid with vocal healthy?

While singers, including myself, may find *Sequenza III* to be appealing or interesting, there is still a debate about the appropriate amount of time one should wait before studying and performing such a work. This is due to the exceptional skill and technical demands of the composition, which need a highly skilled and virtuousic performer. Within the Classical repertoire, there exists music that may be deemed too challenging for a young singer. For instance, the character of "Aida" in Verdi's opera *Aida* is typically assigned to a seasoned soprano due to the intricate technical requirements of the piece. Similarly, when it comes to extended techniques, possessing experience and a thorough understanding of the instrument is crucial. Due to the demanding vocal requirements of *Sequenza III*, exploring the piece without guidance can be detrimental.

Ziegler has argued that the lack of resources for developing teaching methods to explore extended techniques poses challenges for singers attempting compositions in this style. This limitation also hinders singers' interest in exploring the repertoire. Consequently, this compositional style becomes the "Neglected sound" in vocal training institutions and performance spaces; "neglected" but yet could play a pivotal role for singers if explored, as proven by the findings above. As a result, Ziegler created a series of technical exercises for extended technique, which were motivated by specific compositions, including *Sequenza III*. She takes certain technique applications and turns them into exercises.[183]

[181] Leonard, "A proposal to expand," 27-32.
[182] Dotts, *Educational Foundations,* 76.
[183] Ziegler, "A Pedagogical guide," 76-89.

In order to train singers in a particular style, it is necessary to apply technical exercises that are suitable for that style. For instance, a rock band lead singer may not do the same vocal training exercises that the singer Adele would for her voice. Training exercises are designed to develop and strengthen the muscles required for a particular set of skills or movements. This is similar to how a runner cannot be expected to suddenly know how to bench press 100kg of weight if they have never trained for it, or a heavyweight champion to outrun an athletic runner. Therefore, using *bel canto* exercises will not provide the necessary technical skills to perform an extended technique composition. Today, the question remains about how to effectively integrate this training to both singers and vocal teachers in our institutions. Prior to discussing the method, it is crucial to comprehend the rationale for the need for introducing this repertoire training to institutions. Several reasons that we have discussed in this dissertation include the advantages of investigating this collection of works. However, it is evident that the issue of implementation is still relatively unexplored, leading to a scarcity of available resources.

Leonard's study demonstrated that the utilisation of extended techniques had a beneficial impact on the singers' vocal technical talents and enhanced their knowledge of their instrument. Therefore, it can be inferred that extended technique serves as a solution for vocal technical problems by compelling individuals to utilise the inherent capabilities of their voice in order to achieve natural and healthy singing. Consequently, the prevalence of vocal health disorders among singers could diminish.[184]

Many studies on this repertoire fail to grasp the essence and instead provide detailed commentary that does not assist the reader in comprehending the style. As more singers engage in research and pedagogical studies, future research will likely lead to more efficient teaching methods. These methods will enhance interest in vocal repertory and elevate the quality of vocal training at educational institutions. Perhaps it could also be useful for vocal teachers to engage with this type of research, as they bear the responsibility of shaping the futures of their vocal students.

Then, could *Sequenza III* be seen as a possible vocal technique "antidote"? Or perhaps, the composition style itself can be considered an antidote.

The "antidote" nature in this composition could be how it enforces natural use of the voice without bad habits or manufacturing sound. This could play the role of counteracting the bad habits and possibly eliminating them.

7.1 Concluding Remarks

This composition style is something that should continually be explored by both voice students and teachers. It offers a great tool to better teaching of technique for many to still to come. *Sequenza III* and Cage's *Aria* are just a few of a handful of pieces in this style that exist today.

The conversation should now move from "What are extended techniques?" to "How can we implement extended techniques?" It is time we rather focus on discovering methods to improve the problem of vocal technique in order to guarantee a prosperous future for opera and maintain or even exceed the level set by opera legends like Mirella Freni, Luciano Pavarotti, Montserrat Caballé, etc. *Sequenza III* and similar compositions should be further examined and utilised as

[184] Leonard, "A proposal to expand," 27-32.

educational resources in academic institutions. Though, it should be noted that exploring this repertoire does not guarantee that singers will completely avoid all vocal problems. However, it is likely to reduce the occurrence of vocal health issues.

Berio's use of extended technique in *Sequenza III* explores the pursuit of authentic expression and musical significance, leading to a wide range of investigation paths, such as the music relation to language, the comparison of the technique to the essence of the musical language of our predecessors, the evolution of music, etc. For the purpose of this paper I could only focus on one aspect of it, which is the vocal technique aspect. In stimulating the reader's curiosity about potential future study directions, I have offered below the direction for future research which delves deeper into the subject matter. This section offers to broaden one's viewpoint on the several avenues for additional investigation into this topic.

7.2 Direction for future Research

As previously discussed, the study of extended techniques' positive effects on vocal health because of the "pure" application of the voice needed for the style and comparison to the "echo" of our ancestors' claims, raises an intriguing question about the relationship between extended techniques and the "musical language" of our predecessors. By delving into the genre of "New music" and the composers' quest to uncover the genuine essence of music through their unique composition styles, which incorporates natural human sounds such as coughing and laughing as musical expressions, as well as recognising the advantages of exploring this repertoire for the human voice, it is worth contemplating whether extended techniques truly capture the "true" essence of music in their application.

For example, in the Mozart aria *Deh vieni non tardar*, the character "Susanna" effectively conveys her message through a combination of her spoken words and the accompanying descriptive music, which sets the mood. Conversely, in a piece such as *Sequenza III*, the vocalists do not convey any discernible meaning through the text, and there is no accompanying music. Instead, meaning is conveyed through the production of nonsensical vocal sounds. Some scholars, such as the previously mentioned Leonard and Monk, refer to this as exhibiting primitive traits in the context of evolutionary studies.[185]

I have always been fascinated by music's communication power and our natural affinity to it. The study of these extended techniques and their functional similarities to our predecessors' "echos" piqued my interest in investigating this issue from an evolutionary standpoint. To comprehend the genuine significance of music, it is imperative to investigate the evolution of its meaning. This will enable us to grasp its initial functionality and its present purpose, as well as how it has transformed throughout time. Here is an examination of the significance of music within the framework of evolutionary research.

Music language: Evolution of musical meaning

Extended techniques, such as throat singing, overtone singing, and ululating, are non-traditional vocalisation techniques that produce distinctive sounds and harmonics. These approaches have

[185] Leonard, "A proposal to expand," 27-32.

been utilised for many years not only by composers like Berio, but also in numerous cultures and musical traditions, and frequently used to convey spiritual and emotional expressions. [186]

To discover a more comprehensive explanation for the origins and functionality of this phenomenon, I find the Charles Darwin theory of evolution to be a more precise and reliable framework as an explanation. According to the Darwinism theory, human beings initially communicated through non-verbal vocalisations such as grunts and screams and were able to comprehend one another. When we categorise this non-verbal phenomenon in a broader and more universally comprehensible manner, it can be classified as music.[187] This first language of men as proposed by Darwin resembles the extended techniques.

In the previously discussed study conducted by Leonard on the benefits of studying extended techniques for vocal development, she examined the expressive aspects of the voice in relation to their presumed primitive function, in reference to the theory of Darwinism. In this aspect she describes the voice as a sole instrument that can produce sound without being restricted by language. Leonard then asserts that in the observation of singers that employ extended techniques, the non-verbal expression of emotions can be witnessed, similar to that of our predecessors.

While there is not much proof yet relating Darwin's theory to the development of extended vocal techniques, one could speculate that the ability to produce a wide range of vocal sounds may have been advantageous in mating and social contexts. The ability for one to perform complex vocalisations may have acted as a display of genetic quality or physical fitness, in line with Darwin's theory of sexual selection.[188]

Patrick Savage, in an article he wrote for “Palgrave communications”, explored the music origins in relation to cultural evolution. He claimed that early comparative musicologists favoured using Spencer's idea of progressive evolution over Darwin's explanation of evolution in order to comprehend the evolution of music. Spencer’s notion supported the assumption that music evolves from simple to complex, as societies progress from primitive to civilised. Savage states that though modern cultural evolutionary scholars seem to oppose this notion as the new idea of “echoes of forgotten ancestors” emerges and may seem to align with Darwinism. Could the “echoes” turn out to be echoes of Social Darwinism?[189] The exploration of extended techniques by composers, alone negates Spencer’s notation but rather supports more Darwin’s claims.

When comparing the "musical language" used by our predecessors to the extended technique utilized by Berio in *Sequenza III*, one can find numerous similarities in terms of how the voice is fully utilised as a means of communication, as Leonard stated. Conversely, the function of extended technique music in contemporary times differs from that of the "music language" employed by our predecessors. While the framework is comparable, the objective is distinctive.

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[186] Anu Onasanya, “Beyond the beat: The vocal art of African Music”, African Music Library, October 24, 2024, accessed February 17, 2025, https://africanmusiclibrary.org/blog/beyond-the-beat-the-vocal-art-of-african-music.

[187] Charles Darwin, *On the origins of species by means of natural selection, or the preservation of favoured races in the struggle for life* (London: John Murray, 1859), p. 80-130.

[188] Darwin, *Origins of species*, 80-130.

[189] Patrick E. Savage, “Cultural evolution of music,” *Palgrave Communications* 5, (2019): 3, accessed August 17, 2022, doi:10.1057/s41599-019-0221-1.

Furthermore, an additional significant distinction will be the incorporation of textual elements within *Sequenza III*, which we do not find in the "music language" of our predecessors.

In looking at the exploration of extended techniques and the "musical language" of the predecessors, does this indicate that "music evolution" has reached a point where it reflects in parallel with “the before”? Similar to how outdated fashion trends resurfaces in modified form in the fashion industry over a period of time, the extended technique of the human voice can be viewed as a reflection or return of the earlier "musical language." I have created a diagram below to assist put this into perspective, which I call the "Spiral-Evolution Theory of Music."

An illustration of how this procedure can occur is shown in the diagram below.

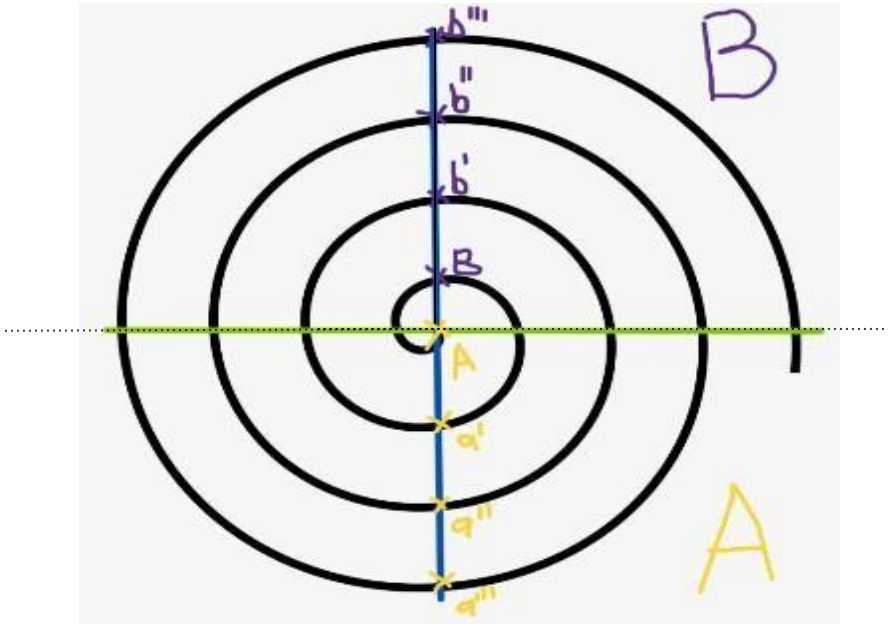


Figure 5: The Spiral-Evolution Theory of Music Diagram

The diagram illustrates the progression of music evolution, with (A) denoting the initial state or 'origin' state of music. Subsequently, (B) represents the stage where music reaches its peak or "climax" during a particular era, followed by a decline as it returns to point (a) but in a modified form. (a) signifies a return to the initial state, but in a transformed manner due to the preceding evolution that took place. This state is characterised by composers seeking to delve into the genuine essence of music beyond the societal constraints that govern its exploration. The emergence of extended techniques could serve as a notable indication of this pursuit. and lastly, the Roman numerals on the letters indicate the altered phases.

In an article about cultural evolution music by Savage, the early comparative musicology reliance on Spencer’s notion of progressive evolution proves to fall short, as we witness today, music seems to move in a spiral notation. Much like the modern cultural evolutionary scholars have discovered, the modern music seems to mimic the “music” of our ancestors; especially extended technique applied music. It is as though the composers are trying to re-discover “sound

meaning."[190] Rather than music evolution being a single line moving from primitive to complex, it's a progression whereby music evolves into its complex state influenced by the social environment of that era and then at the peak of its complex state it returns back to simplicity, as composers question the "meaning of music," though the return to primitive is not entirely to what it was before, it is now a modified version by the factors affecting music at that state. Please see the illustrations that follow below which present the graphical explanation.

Illustration A: Spencer's notion of music evolution

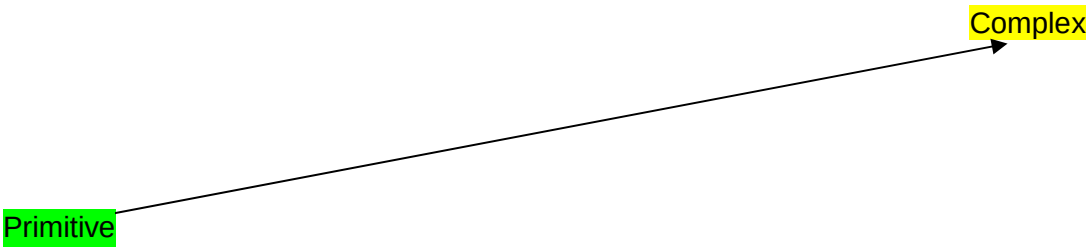
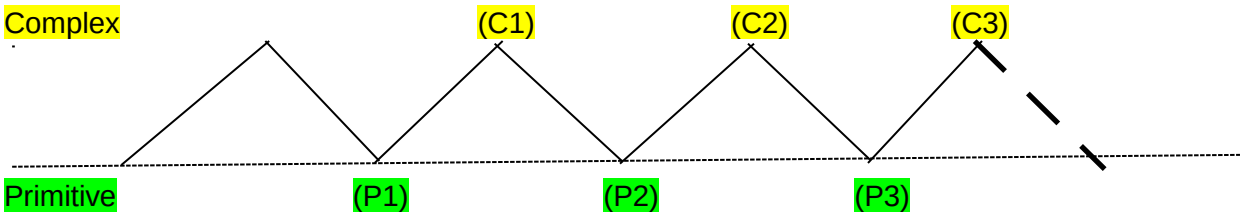


Illustration B: Spiral music evolution using Darwinism



The theory of spiral-evolution in music explores the idea that music undergoes a cyclical process of development, transitioning from a minimalistic state to an exceedingly complex state, and then returning to a modified minimalistic form. Similarly, to Darwinism, evolution can result in increased complexity as well as minimalism. Consider how specific traits of species lose significance/purpose over time as a result of changes in the environment or due to the changes in the functionality of the species. Though Darwin's theory does not necessarily address the "recycling" of material, the Spiral music evolution theory does. However, this is simply a conjecture that has not yet been properly investigated and confirmed. A potential route for future research could involve doing a more comprehensive investigation of this notion.

This inquiry seeks to determine whether "New music" and extended techniques can serve as a manifestation of our ancestors' "musical language" and as a means to comprehend the "authentic" human voice.

[190] Savage, "Cultural evolution of music," 3.

APPENDIX 1

A compilation of selected recordings showcasing the live renditions of *Sequenza III* for Female Voice.

Performer	**Video Title**	**Link**
Cathy Berberian	Luciano Berio: *Sequenza III*, per voce femminile (1965)	https://youtu.be/1hxjCIANddU?si=E3kjwqSMxqYRqCXv
Christine Schadenberg	*Sequenza III*	https://youtu.be/3t5su4U2pg0?si=P10oUsAFqpLQrs4H
Liesbeth Devos	Luciano Berio - *Sequenza III* by Liesbeth Devos - Live performance	https://youtu.be/2eAeWqI5nBQ?si=VDiYLi_d7uFIdplb
Luisa Castellani	Berio: *Sequenza III* for Female Voice	https://youtu.be/z6873TGwCXQ?si=Sl5fm-fT4clH9vU-
Laura Catrani	*SEQUENZA III*, Luciano Berio, Laura Catrani	https://youtu.be/E0TTd2roL6s?si=I0jQjgcOHjmhv0xd

A performance example of Cage's 'Aria'

Performer	**Video Title**	**Link**
Claron McFadden	Claron McFadden - John Cage/ Aria	https://youtu.be/Y3tbdHbqUsQ?si=KTIg8Z_reDlYJxRY

The table below presents a comprehensive catalog of Berio's vocal compositions, including the composition name, year of composition, and the specific instruments for which each piece was written. The list has been organized in descending order, with the most recent compositions appearing first. The following information is sourced from the official website of Luciano Berio, specifically the Centro Studi Luciano Berio. The website was established on October 24, 2009, by Talia Pecker-Berio.

Composition	**Year**	**Instruments**
Stanze	2003	Baritone, 3 small male choirs and orchestra
E si fussi pisci (Sicilian love song)	2002	Mixed choir acapella
Turandot (by Giacomo Puccini (1924). Completion of the third act by Luciano Berio)	2001	Choir, soloists and orchestra

Altra voce	1999	Alto flute, mezzo-soprano and live electronics
Cronaca del Luogo	1998-1999	soloists, actors, choir and orchestra
Outis (Azione musicale in 2 parti)	1995-1996	Choir, soloists and orchestra
Shofar (part of the third cycle of Outis)	1995	Choir and orchestra
Hör (Prologue from Requiem der Versöhnung)	1995	Choir and orchestra
Vor, während, nach Zaide (commentary on an unfinished opera by W.A. Mozart)	1995	
Twice upon ... (Theatre without words)	1994	6 children's groups
There is no tune	1994	Choir acapella
Epiphanies	1991	Female voice and orchestra
Otto Romanze (Verdi-Berio)	1990	Tenor and orchestra
Canticum novissimi testament (Ballata)	1989-1991	4 clarinets, saxophone quartet and 8 voices
Ofaním	1988/1997	2 children's choirs, 2 instrumental groups, female voice and live electronics

Sechs Frühe Lieder (Mahler- Berio)	1987	Baritone and orchestra
Fünf Frühe Lieder (Mahler-Berio)	1986	Baritone and orchestra
Un re in ascolto (Azione musicale in 2 parti)	1979-1983	Soloist, actors, choir and orchestra
La vera storia (Azione musicale in 2 parts)	1977-1980	Soloists, actors, choir and orchestra
Siete canciones populares españolas (De Falla-Berio)	1978	Mezzo-soprano and orchestra
Coro	1975-1976	40 voices and instruments

A-Ronne (reworked from original version of 1974 for the Swingle Singers)	1975	8 singers
Calmo (in memoriam Bruno Maderna)	1974/1989	Mezzo-soprano and 22 instruments
Cries of London	1974-1976	8 voices
Recital I (for Cathy)	1972	Mezzo-soprano and 17 instruments
E vó (Sicilian Lullaby from Opera)	1972	Soprano and instruments
Air (from Opera)	1970	Soprano and 4 instruments
Melodrama (from Opera)	1970	Tenor and instruments
Opera	1969-1970/1977	Soloists, actors, choir and orchestra
Questo vuol dire che...	1968	3 female voices, choir, speaker and tape
Sinfonia	1968/1969	8 voices and orchestra
Ballade von der sexuellen Hörigkeit - Song of Sexual Slavery (Weill-Berio)	1967/1972	Alto (high) and ensemble
Beatles Songs - Michelle I - Michelle II - Yesterday - Ticket to Ride (Lennon- McCartney- Berio)	1965/1967	Voice and instruments

O King	1968	Mezzo-soprano, and 5 players
Il combattimento di Tancredi e Clorinda (Monteverdi-Berio)	1966	Soprano, tenor, baritone, harpsichord and strings
Sequenza III	1965/1966	Female voice

Laborintus II	1965	Voices, instruments and tape
Folk Songs	1964/1973	Mezzo-soprano and orchestra
Folk Songs	1964	Mezzo-soprano and 7 instruments
Traces	1964	Soprano, mezzo-soprano, 2 choirs of 24 voices, 2 actors and orchestra
Esposizione (withdrawn and reworked to form part of *Laborintus II*)	1963	Mezzo-soprano, 2 treble voices, group of mimes/dancers, 14 instrumentalists and tape
Passaggio (Messa in scena)	1961-1962	Soprano (solo), choir and orchestra
Epifanie	1959-1961/1965	Female voice and orchestra
Circles	1960	Female voice, harp and 2 percussionists
Allez-hop	1952-1959	Mezzo-soprano, 8 actors, ballet and orchestra
Chamber Music	1953	Female voice, cello, clarinet and harp
Reduction	1953	2 sopranos and piano, arranged for soprano, mezzo soprano, flute (piccolo), 2 clarinets (bass clarinet), harp, accordion, cello and double bass
El mar la mar	1952/1969	Soprano, mezzo-soprano and 7 instruments
Deus meus	1951	Voice and 3 instruments
Magnificat	1949	2 sopranos, mixed choir, 2 pianos and instruments
Due pezzi sacri	1949	2 sopranos, piano, 2 harps, timps and 12 bells
E di ten el tempo	1948	Voice and piano

Ad Hermes	1948	Voice and piano
Quatro Canzoni popolari	1946-1947	Female voice and piano
O bone Jesu	1946	Choir
Tre liriche greche	1946	Voice and piano
Due cori popolari	1946	Unaccompanied choir
L'annunciazione (Rilke)		Soprano and chamber orchestra

APPENDIX 2

Please refer to the attached score and composer's notes.

UE

Luciano Berio

Sequenza III

per voce femminile (1966)

to Cathy

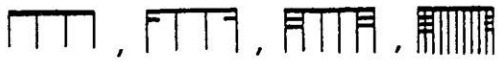
Luciano Berio: Sequenza III

UE 13723
ISMN 979-0-008-03485-5
UPC 8-03452-00835-4
ISBN 978-3-7024-1074-2

The performer (a singer, an actor or both) appears on stage already muttering as though pursuing an off-stage thought. She stops muttering when the applause of the public is subsiding; she resumes after a short silence (at about the 11'' of the score). The vocal actions must be timed with reference to the 10'' divisions of each page.

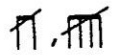
● = sung tones
O = whispered, unvoiced sounds } to be held to next sound or to ⌝, ⌟

◆, Φ = sung and whispered sounds as short as possible

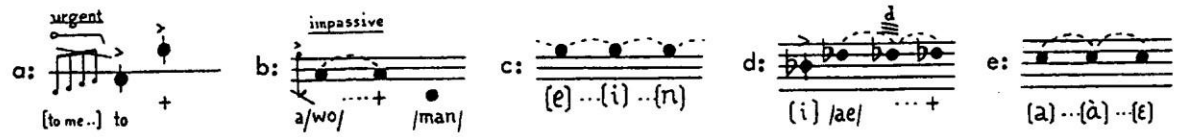

= different speeds of periodically articulated sounds


= can be performed as fast as possible


= as fused and continuous as possible


etc. = all grace notes as fast as possible

Although the borderline between s p e a k i n g and s i n g i n g voice will often be burred in actual performance, the vocal actions written on one line (a) are "spoken" while those written on three or five lines are "sung". On three lines, only relative register positions are given (b); dotted lines connect notes of exactly the same pitch (c). On five lines (d) precise intervals are given, but their pitch is not absolute: each sequence of intervals (between "spoken" sections) can be transposed to fit the vocal range of the performer; dotted lines indicate that the change of vocal colors on the same pitch must occur smoothly and without accents (e).




= intonation contour

The text is written in different ways:

1) Sounds or groups of sounds phonetically notated: {a} ,{ka}, {u} , {i} , {ø} , {ø} ,[ait],[be], {e} , {ɛ} etc.
2) Sounds or groups of sounds as pronounced in context: /gi/ as in give, / wo / as in woman, / tho / as in without, / co / as in comes etc.
3) Words conventionally written and uttered: "give me a few words" etc.

Sounds and words lined up in parenthesis as (/ a / tru / to / me /) must be repeated quickly in a random and slightly discontinuous way.

Groups of sounds and words in parenthesis as (to me...), (be/lo/...), (/co//ta/...) etc. must be repeated quickly in a regular way. At 15'' of the score, for instance, (to me...) to is equivalent to to me to me to; at 30'', ([e] [a]...)[a] is equivalent to [e][a] [e][a] [e] [a]; at 1' the group (/ta/[ka] be...)must be repeated as many times as possible for about 2''.

L. Laughter must always be clearly articulated on a wide register.

[?] = bursts of laughter to be used with any vowel freely chosen

Φ = mouth clicks

Ϟ = cough

Ψ = snapping fingers gently

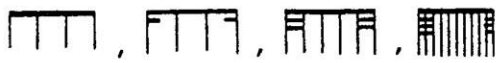
+ = with mouth closed

o, o⌐ = breathy tone, almost whispered

The performer (a singer, an actor or both) appears on stage already muttering as though pursuing an off-stage thought. She stops muttering when the applause of the public is subsiding; she resumes after a short silence (at about the 11'' of the score). The vocal actions must be timed with reference to the 10'' divisions of each page.

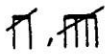
Long notes { ● = sung tones; O = whispered, unvoiced sounds } to be held to next sound or to ⌝, ⌟

Short notes ϕ, Φ = sung and whispered sounds as short as possible

 = different speeds of periodically articulated sounds

 = can be performed as fast as possible

 = as fused and continuous as possible

 etc. = all grace notes as fast as possible

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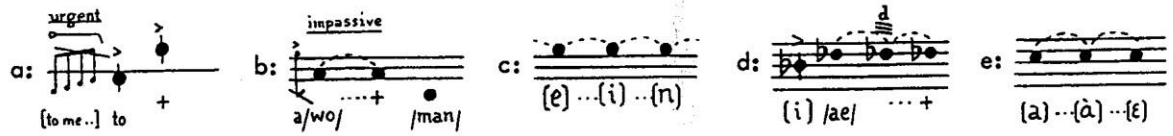

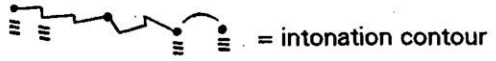 = intonation contour

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Ϟ = cough

Ψ = snapping fingers gently

\+ = with mouth closed

o, o⌐ = breathy tone, almost whispered.

 = breathing in, gasping

 = tremolo

 = dental tremolo (or jaw quivering)

 = trilling the tongue against the upper lip (action concealed by one hand)

 = tapping very rapidly with one hand (or fingers) against the mouth (action concealed by other hand)

 = hand (or hands) over mouth

 = moving hand cupped over mouth to affect sound (like a mute)

 = hands down

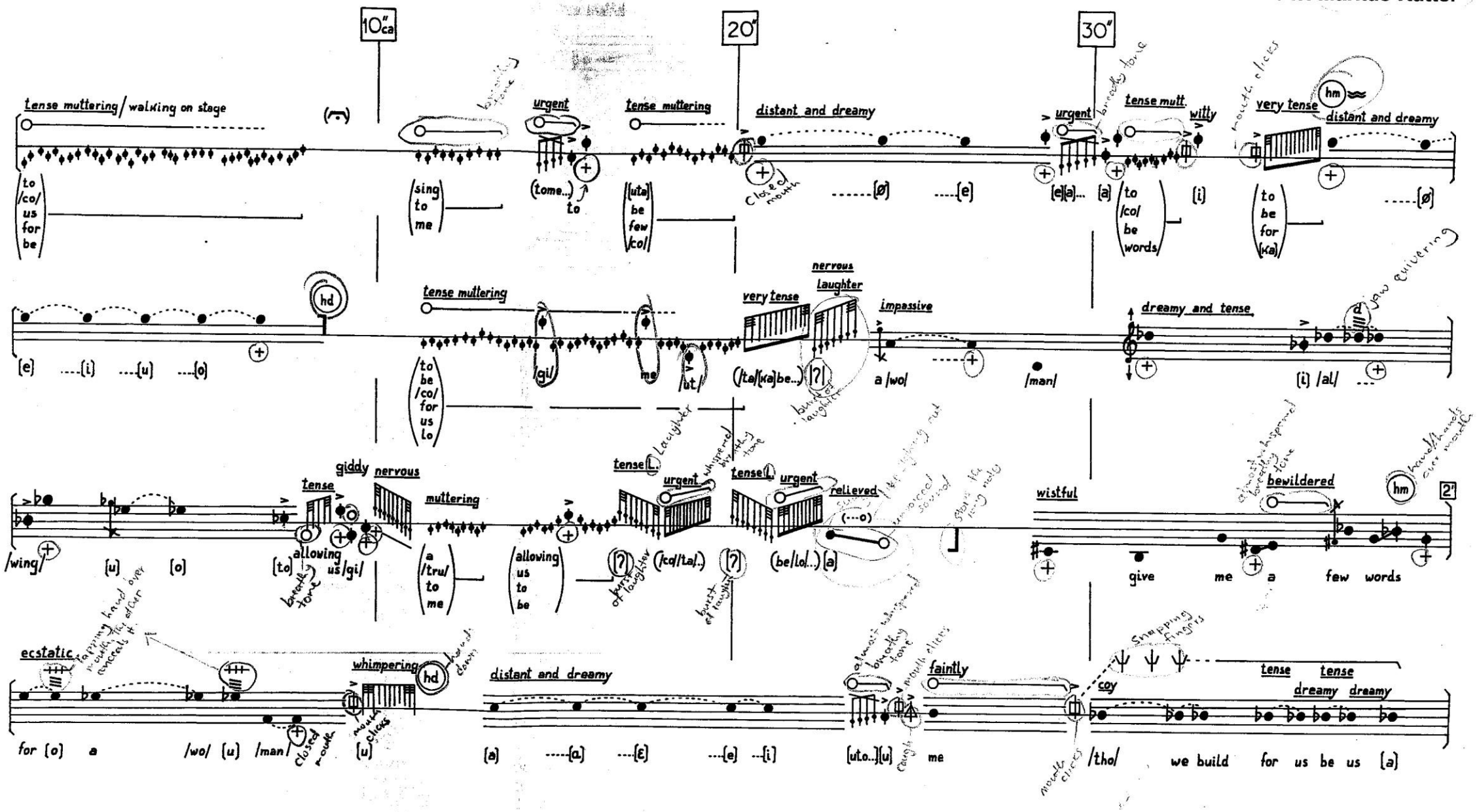
Hand, facial and bodily gestures besides those specified in the score are to be employed at the discretion of the performer according to the indicated patterns of emotions and vocal behavior (t e n s e, u r g e n t, d i s t a n t, d r e a m y etc.). The performer, however, must not try to represent or pantomime tension, urgency, distance or dreaminess but must let these cues act as a spontaneous conditioning factor to her vocal action (mainly the color, stress and intonation aspects) and body attitudes. The processes involved in this conditioning are not assumed to be conventionalized; they must be experimented with by the performer herself according to her own emotional code, her vocal flexibility and her "dramaturgy".

Sequenza III

per voce femminile
(1966)

Luciano Berio
(1925–2003)

Text: Markus Kutter



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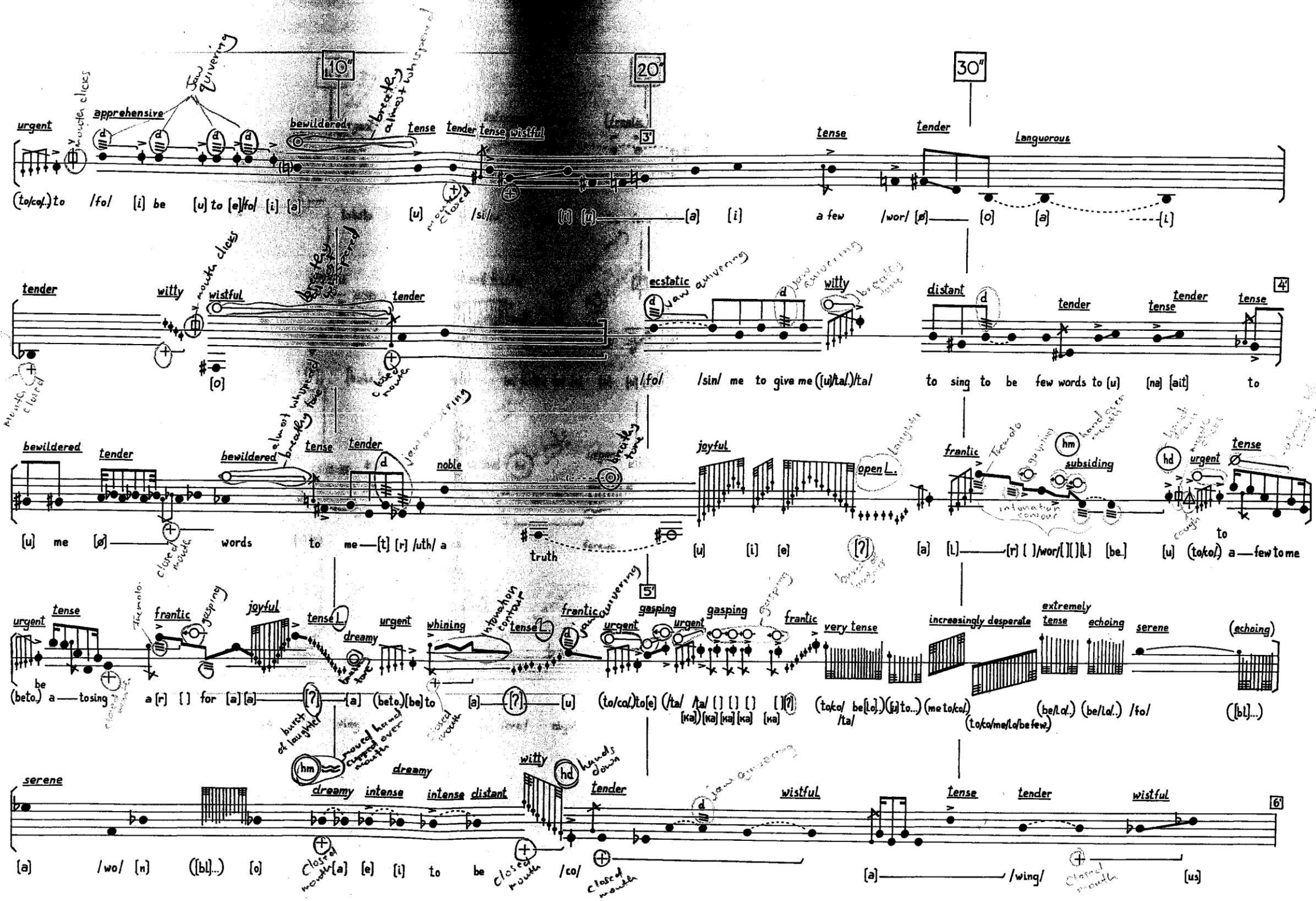

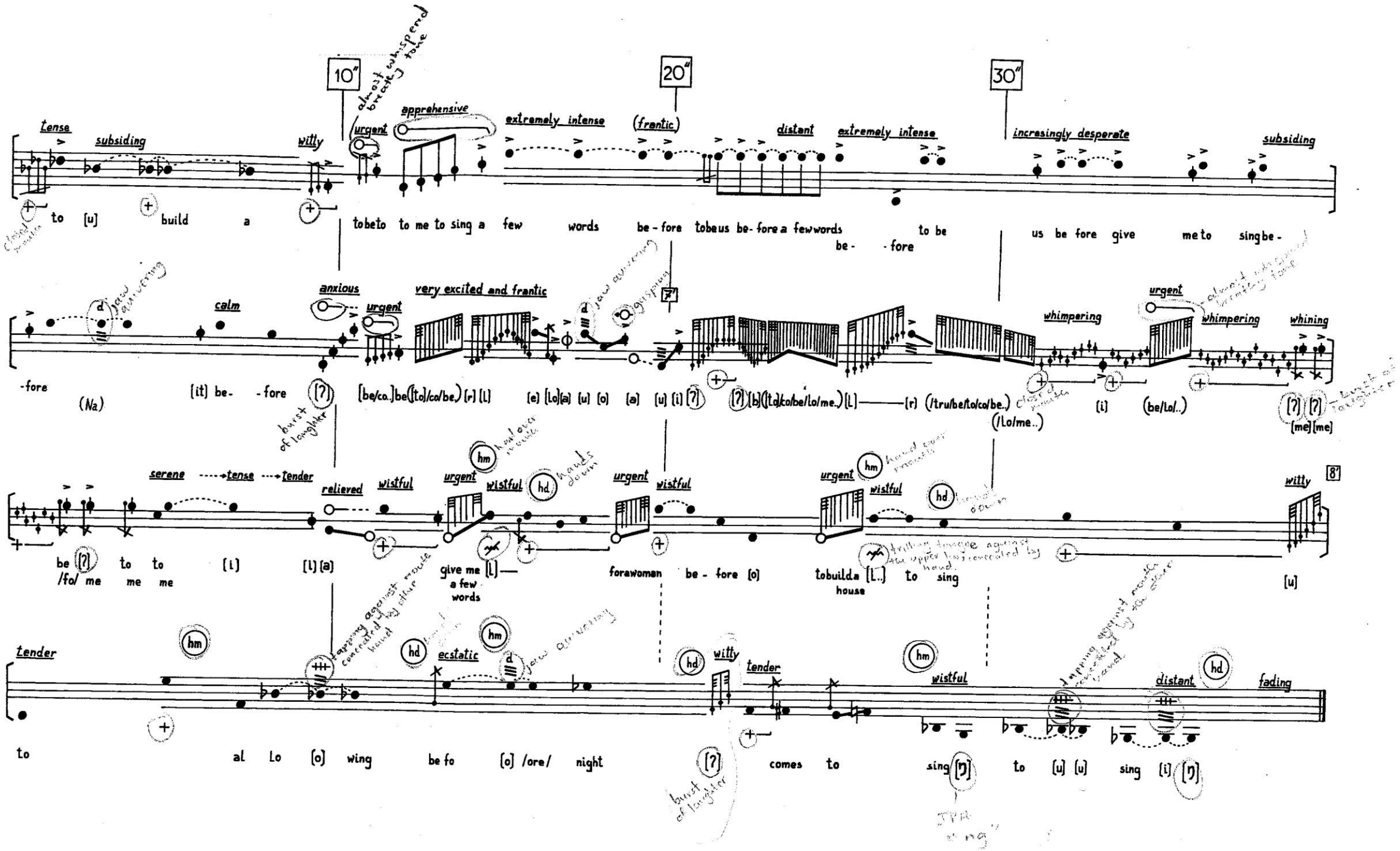

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REFERENCES

Albera, Philippe, and Jacques Demierre. In *Revue Contrechamps n° 1*.1983.

AS Music Blog. "*Sequenza III* for Female voice - Revision Notes." May 21, 2016. Accessed July 14, 2023. https://blogasmusic.wordpress.com/2016/05/21/berio-sequenza-iii-revision-notes/.

Aston, Stephanie L. "Journeys of Expression: An Examination of Four Twentieth and Twenty-First Century Vocal Works." PhD diss. University of California, 2011.

"Avant-garde." Cambridge Dictionary. Cambridge University press. Accessed September 7, 2024. https://dictionary.cambridge.org/dictionary/english/avant-garde.

Beretin, Nena. "A Study of the Critical Reception and the Dissemination of Luciano Berio's Works." PhD diss. University of New England. 2015.

Berio, Luciano. "*Sequenza III* per voce femminile." London: Universal Edition, 1966.

Brady, Clare. "The Open Voice: Vocality and Listening in Three Operas by Luciano Berio**."** PhD diss. University of London, 2017.

Bonhag, Mary. "Exploring virtuosity." *Scrag mountain music Blog*. April 24, 2018. Accessed March 23, 2022. http://www.scíagmountainmusic.oíg/blog/luciano-beíios-sequenza-iii-foí- voice.

Born, Georgina. *Rationalizing Culture IRCAM, Boulez, and the Institutionalization of the Musical Avant-grade*. Berkeley and Los Angeles, California: University of California Press, 1995.

Centro studi: Luciano Berio. "*Sequenza III* (author's note)." Accessed October 11, 2023. http://www.lucianoberio.org/node/1460?1487325698=.

Cohen, Laurie P. "That delicate voice: A singer's nemesis." *The New York Times*, June 26, 1983. https://www.nytimes.com/1983/06/26/arts/that-delicate-voice-a-singer-s-nemesis.html?smid=url-share.

Columbia University Libraries. "Vladimir Ussachevsky." Accessed February 7, 2025. https://exhibitions.library.columbia.edu/exhibits/show/music-centennial/electronic-and-computer-music.

Crump, Melanie A. "When words are not enough: Tracing the development of extended vocal techniques in 20th century America." PhD diss. The University of North Carolina, 2008.

Dalmonte, Rossana, and Niva Lorenziniin. In *Revue Contrechamps n° 1.* Translated by Daniel Haefliger. 1983.

Darwin, Charles. *On the origins of species by means of natural selection, or the preservation of favoured races in the struggle for life.* London: John Murray, 1859.

Dotts, Brian W. *Educational Foundations: Philosophical and Historical Perspectives*. Cambridge: Cambridge University Press, 2018.

Dunnett, Ben. *Ice Melt.* Accessed December 15, 2023. https://www.musictheoryacademy.com/understanding-music/serialism/.

Edwards, Matt. “Vocal damage in Classical singers: It’s not just pop singers that get hurt.” Matt Edwards. August 13, 2015. Accessed December 12, 2024. https://wp.me/p4FThP-2F.

Edwards, Patti Y. “Luciano Berio’s *Sequenza III*: The use of vocal gesture and the genre of the mad scene.” PhD diss. University of North Texas, 2004.

“Extended Technique.” Music in movement. Accessed September 7, 2024. http://musicinmovement.eu/glossary/extended-technique.

Feys, Cedric. “Berio & Berberian: more than a composer and his muse.” Bozar. December 12, 2024. Accessed February 14, 2025. https://www.bozar.be/en/watch-read-listen/berio-berberian-more-composer-and-his-muse.

Greenberg, Jonathan. "Singing." *Grove Music Online.* January 31, 2014. Accessed January 20, 2024. https://doi.org/10.1093/gmo/9781561592630.article.A2258282.

Guzman, Marco, Vrushali Angadi, Daniel Croake, Christopher Catalan, Constanza Romero, Gabriela Acuña, Camilo Quezada, Richard Andreatta, and Joseph Stemple. “Does a Systematic Vocal Exercise Program Enhance the Physiologic Range of Voice Production in Classical Singing Graduate-Level Students?” *Journal of Speech, Language & Hearing Research* 63, no. 4 (April 1, 2020): 1044–52. doi:10.1044/2020_JSLHR-19-00362.

Heaney, Joshua. “Berio’s Sequenza IX: Enticing the Listener.” *Joshua Heaney Saxophonist & Educator*. February 12, 2022. Accessed February 10, 2025. https://www.heaneymusic.com/blog/2022/2/12/berios-sequenza-ix-enticing-the-listener.

Huettenrauch, Tina. “Three case studies in twentieth-century performance practice.” PhD diss. Louisiana State University and Agricultural and Mechanical College, 2012.

Johnson, Megan A. “Listening to Luciano Beíio’s *Sequenza III*: A Multi-peíspective Examination of the Singeí’s Embodied Expeíience.” Masters diss. Univeísity of Ottawa, 2013.

Karikis, Mikhail, Elaine Mitchener, Jessica Walker, and Konstantinos Thomaidis. “Voice in Devising/Devising through Voice: A Conversation with Mikhail Karikis, Elaine Mitchener and Jessica Walker.” *Journal of interdisciplinary voice studies* 1, no. 2 (2016): 173–182. https://doi.org/10.1386/jivs.1.2.173_7.

Kuiper, Kathleen. "Modernism." Encyclopedia Britannica. January 5, 2024. Accessed March 12, 2024. https://www.britannica.com/art/Modernism-art.

Leonard, Gwenellyn. “A proposal to expand solo vocal pedagogy to include selected extended vocal techniques.” PhD diss. University of Oregon, 1990.

Marchese-Ragona, Rosario, Domenico A. Restivo, Ioannis Mylonakis, Giancarlo Ottaviano, Alessandro Martini, Robert T. Sataloff, and Alberto Staffieri. “The superior laryngeal nerve injury of a famous soprano, Amelita Galli-Curci.” *Acta otorhinolaryngologica Italica: organo ufficiale della Societa italiana di otorinolaringologia e chirurgia cervico-facciale* 33, no. 1 (2013): 67-71. Accessed November 12, 2022. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3631811/.

Matt Edwards. “Vocal damage in Classical singers: It’s not just pop singers that get hurt.” Accessed December 12, 202. https://edwardsvoice.wordpress.com/2015/08/13/vocal-damage-in-classical-singers-its-not-just-pop-singers-that-get-hurt/.

Mkhwanazi, Fanelesibonge. “The language of music: A preliminary study of theories concerning its origins and evolution.” Honour’s thesis. University of Cape Town. 2021.

Neidhöfer, Christoph. “Inside Luciano Berio’s Serialism.” *Music Analysis* 28, no. 2/3 (2009): 301-348. http://www.jstor.org/stable/41289709.

Onasanya, Anu. “Beyond the beat: The vocal art of African Music.” African Music Library. October 24, 2024. Accessed February 17, 2025. https://africanmusiclibrary.org/blog/beyond-the-beat-the-vocal-art-of-african-music.

Osmond-Smith, David, and Cathy Berberian. “The Tenth Oscillator: The Work of Cathy Berberian 1958-1966.” *Tempo* 58, no. 227 (2004): 2-13. Accessed February 06, 2025. https://www.jstor.org/stable/3878673.

Osmond-Smith, David, and Ben Earle. "Berio, Luciano." *Grove Music Online,* (2001); https://doi.org/10.1093/gmo/9781561592630.article.02815.

Penn Medicine Becker ENT & Allergy. “Why Can’t I Sing Anymore? – Exploring Voice Disorders in Singers.” Accessed January 5, 2024. https://www.beckerentandallergy.com/blog/voice-disorders-in-singers#:~:text=Overuse%20of%20the%20vocal%20cords%20and%20poor%20technique%20are%20common,even%20loss%20of%20singing%20voice.

Peattie, Thomas. “Luciano Berio’s Nineteenth Century.” *Contemporary music review* 38, no. 3-4 (2019): 421. doi:10.1080/07494467.2019.1596640.

Potter, John. *Vocal Authority: Singing Style and Ideology*. Cambridge: Cambridge University Press, 1998.

Raglan, Greta B, and Jay Schulkin. “The evolution of music and human social capability.” *Frontiers in Neuroscience* 8, (2014): 5. Accessed June 11, 2023. https://doi.org/10.3389/fnins.2014.00292.

Savage, Patrick E. “Cultural evolution of music.” *Palgrave Communications* 5, (2019): 3. Accessed August 17, 2022. doi:10.1057/s41599-019-0221-1.

Stark, James A. (James Arthur). *Bel Canto: A History of Vocal Pedagogy*. Toronto; University of Toronto Press, 1999.

“Serialism.” Collins English Dictionary. Harper Collins publishers. Accessed September 7, 2024. https://www.collinsdictionary.com/dictionary/english/serialism.

Spitzer, Michael. *The Musical Human: A history of life on earth.* London: Bloomsbury publishing, 2021.

“The meaning of vocal technique.” Furman University. Bruce Schoonmaker. Accessed September 7, 2024. https://facweb.furman.edu/~bschoonmaker/meaning.html.

“Virtuosity.” Cambridge Dictionary. Cambridge University press. Accessed January 20, 2024. https://dictionary.cambridge.org/dictionary/english/virtuosity.

Wei, Yang. “’Extension’ and ‘fusion’ – Discussion of modern ‘New Voice’ works and singing.” *Advances in Social Science, Education and Humanities Research* 119, (July 2017): 1218-1222. https://doi.org/10.2991/essaeme-17.2017.251.

Wikipedia contributors. "Oversinging." Wikipedia: The Free Encyclopedia. Accessed September 21, 2022. https://en.wikipedia.org/w/index.php?title=Oversinging&oldid=1234409458.

Wuorinen, Charles. “Notes on the Performance of Contemporary Music.” *Perspectives of New Music* 3, no. 1 (1964): 10–21. https://doi.org/10.2307/832233.

Ziegler, Janet B. “A Pedagogical Guide for Extended and Extreme Vocal Techniques Used in Contemporary Classical Vocal Music.” PhD diss. University of Iowa, 2018.