

The Eternal Path between Sound and Sense: Luciano Berio's Linguistic Exploration in *Sinfonia* and *Coro*

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Abstract

This study examines Luciano Berio's integration of twentieth-century linguistic and semiotic concepts in his works *Sinfonia* and *Coro*, focusing on the interplay between sound, meaning, and structure. It highlights Berio's exploration of the unconscious mind and the idea of 'universality of experience', suggesting that humans may possess an innate musical ability similar to that of language. The article also discusses the concept of the 'theatre of the mind', where Berio combines musical and textual elements to evoke images or situations for the audience's interpretation. Through an analysis of the third movement of *Sinfonia* and *Coro*, the study illustrates how Berio implicitly develops a system of signification that evokes meaning, showcasing both musical and textual productivity, along with the notion of 'the infinite use of finite means'. This exploration contributes to understanding how twentieth-century linguistics and semiotics can inform contemporary music and signify meaning within it.

The field of linguistics that emerged in the twentieth century offered new frameworks to explore the long-standing question of parallels between music and language. This study examines Luciano Berio's exploration of the interplay between music and language, drawing inspiration from linguistics and semiotics to shape his compositional approach. Focusing on Berio's *Sinfonia* (the third movement, 1968–9) and *Coro* (1974–5), this article presents the following points: 1) the two works reflect Berio's investigation into the unconscious mind, probing the existence of 'universality of experience'¹ in music, that is, the inborn musical ability shared by humans, similar to the hypothesis of humanity's innate linguistic ability prevalent during the 1960s; 2) the two compositions demonstrate a signification system derived from the human mind, highlighting music's productivity as a language-like medium and aligning with the concept of the 'infinite use of finite means' in linguistics; and 3) both works evoke a 'theatre of the mind', a concept Berio described in relation to *A-Ronne* (1975), that bridges musical and textual elements, guiding the audience's interpretative process in search of meaning. This article begins by examining Berio's vision in seeking connections between sound and meaning from the late 1960s to the early 1970s, followed by an analysis of *Sinfonia* and *Coro* to identify the linguistic concepts embedded within them.

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1 Luciano Berio, 'Intervista di Philippe Albèra e Jacques Demierre' (1983), in *Interviste e colloqui*, ed. Vincenzina Caterina Ottomano (Turin: Einaudi, 2017), 150.

Finally, a discussion on the notion of the 'theatre of the mind' as a means to evoke meaning from sound in Berio's compositional model is presented.

The eternal path between sound and meaning

When speaking about his relationship with Roman Jakobson and other linguists as well as his views on language, Berio recalled that in the 1950s, many composers were tempted to view and compose music as though it was a language with its own syntax and phonetics.² Composers such as Stockhausen, Boulez, Maderna, Nono, and Berio himself were interested in incorporating phonetic sounds into their works and conceiving musical sounds with various features. For example, in English, the sound 'b' can be described as a series of articulatory features such as bilabial, plosive, and consonant. The emergence of electronic music further intensified the intersection between music and phonetics, as sounds were generated through oscillators by manipulating the configuration of frequencies. Composers naturally drew inspiration from speech science, which originally employed oscillators. However, while Stockhausen explored this intersection in *Westdeutscher Rundfunk*, Berio and Maderna shifted their focus to 'musical phonology' in the *Studio di Fonologia Musicale*.³ Berio was particularly influenced by Roman Jakobson's phonological theories, which, unlike scientific studies on speech sounds, were primarily concerned with the systematic organization and patterns of sounds in language.⁴

Although the trend of incorporating speech science into music began to decline in the 1960s across various studios, Berio remained deeply interested in exploring the intersection between music and language, including a broader range of linguistic aspects. His writings and correspondence reveal his extensive exposure to linguistics of his time, which extended beyond Italian linguists. Notably, Berio introduced Ferdinand de Saussure's *Course in General Linguistics* to his friend Umberto Eco. During his time at the Milan Studio, he studied Noam Chomsky's theories of generative syntax and universal grammar as well as Troubetzkoy's phonological theories.⁵ Later, while working at Harvard University and the Juilliard School of Music in the United States, he engaged in discussions with linguists Roman Jakobson and Thomas Bever.⁶ According to a 1965 letter in which Berio shared a booklist with the music critic Massimo Mila who had enquired about linguistics books

2 Luciano Berio, 'Una domanda a Luciano Berio: Intervista di Brigitte Marger' (1975), in *Interviste*, ed. Ottomano, 85.

3 For more details on the establishment and objectives of *Studio di Fonologia Musicale*, see Veniero Rizzardi and Angela Ida de Benedictis, eds., *Nuova musica alla radio: Esperienza allo Studio di Fonologia della RAI di Milano, 1954–1959* (Rome: RAI Eri, 2000); Maddalena Novati and John Dack, eds., *The Studio di Fonologia: A Musical Journey 1954–1983 Update 2008–2012* (Milan: Ricordi, 2009).

4 Roman Jakobson and Morris Halle, *Fundamentals of Language* (Berlin: Mouton de Gruyter, 1956), 7 and 18.

5 Berio's interest in Roman Jakobson's book *Fundamentals of Language*, Troubetzkoy's *I principes de phonologie*, and Ferdinand de Saussure's *Course in General Linguistics* were recalled by Umberto Eco. See Umberto Eco, 'Ai tempi dello studio', in *Luciano Berio: Nuove Prospettive*, ed. Angela Ida de Benedictis (Florence: Casa Editrice Leo S. Olschki, 2012).

6 See Berio, 'Una domanda a Luciano Berio', 'Esplorare la musica: Dialogo tra Luciano Berio e Nicola Bernardini' (1993), in *Interviste*, ed. Ottomano, 85, 268–9.

translated into Italian, Berio was interested in various subfields of linguistics, such as speech science, communication theory, philosophy of language, psycholinguistics, and sociolinguistics.⁷ In a typescript prepared for a lecture, Berio outlined various approaches to compare music and spoken language, examining their syntactic, semantic, and pragmatic features. He emphasized the inseparability between culture and nature (or convention and evolution) in language; while different languages are formed by cultural norms, language as a whole belongs to our innate human faculties.⁸ This study focuses on two specific areas of language that captivated Berio's interest. One area explores how the study of linguistics aided him in understanding the relationship between sound and meaning, which he described as the 'eternal path between sound and sense'. He once expressed, 'Why am I interested in linguistics? I think I felt, with regards to music, the very strong need to explore the eternal path between sound and sense. Not a specific meaning but a meaning of musical processes. At a time when new material organizations were being sought, it seemed natural to study the organization of languages'.⁹ Berio was interested in exploring not only the relationship between sound and meaning in a specific moment, but also the structural patterns of language. He believed examining these linguistic structures could uncover similarities in the organization of musical materials. The second area of Berio's interest lies in his investigation of the innate musical ability within humanity to process and create music, paralleling the concept of innate language ability proposed by Chomsky and other linguists in relation to language acquisition.¹⁰ Berio referred to this as the 'universality of experience':

In the end, the use of a specific language is not so important, perhaps, compared to man's ability to learn a language. I was wondering if it is possible to find this universality of experience in the field of music, as there is no culture without music. The phenomenon is very complex, and I think there will be immense work to be done.¹¹

Berio's reference to the 'ability to learn a language' is closely related to the study of the innate linguistic competence of humans, a topic widely discussed by contemporary linguists. Berio further characterized his exploration of the similarities between music and language as 'linguistic' projects. However, he considered this endeavour to be somewhat utopian, as he believed that finding exact parallels between the two was ultimately bound to fail. Nonetheless, engaging in this process enabled him to uncover novel relationships between sound and meaning in relation to the intellectual discourses of his time:

it is also certain that precisely this type of research [finding analogies between language and music] is another way of experiencing one of the most real and permanent

7 Letter cited in Mila de Santis, 'Organizzare il significato di un testo', in *Luciano Berio: Nuove Prospettive*, ed. Ida de Benedictis, 250–1.

8 See typescript 'Music and Language' housed in Paul Sacher Stiftung.

9 Berio, 'Intervista con Luciano Berio di Philippe Albèra e Jacques Demierre', in *Interviste*, ed. Ottomano, 150.

10 For more information on Chomsky's discussion of humanity's innate language ability, refer to Noam Chomsky, *Language and Mind* (San Diego, CA: Harcourt Brace, 1968).

11 Berio, 'Intervista di Philippe Albèra e Jacques Demierre', in *Interviste*, ed. Ottomano, 150. The description is followed by his explanation of *Coro*.

conditions of music, which is to constantly pursue a utopia of language, to frantically elaborate 'linguistic' projects which, precisely because they are doomed to failure, they continue to express emotions, to represent spiritual and intellectual landscapes, to discover new and temporary relationships between sound and meaning and to teach us to see the world as a set of processes that interact.¹²

Many of the linguistic concepts discussed in this article, such as the notion of innate linguistic ability, are not yet settled in the field. Comparing these ideas to music further complicates the matter. However, these discussions become inspiration for the composer to work out new approaches in his musical compositions. Furthermore, Berio's exploration of language was also influenced by the use of linguistic plays in literature and the field of semiotics, both within Italy and beyond. He collaborated with prominent figures such as Edoardo Sanguineti, Umberto Eco, and Italo Calvino, who were associated with the Italian *neoavanguardia* movement and the group of *Ouvroir de littérature potentielle* (Oulipo) for Calvino. One of the key features of *neoavanguardia* was the peculiar use of language as a lens for viewing reality by focusing on the dynamic relationship between reality and art.¹³ The dynamic relationships often resulted in disorder or even chaos, where their infinite combinations lead to new ideas on form.¹⁴ This disorder further allowed the neo avant-gardists to explore the arbitrariness of signs.¹⁵ The idea of deriving new ideas of form from combinations or 'disorder' can be observed in various works by Berio, including *Sinfonia* and *Coro*. Additionally, Berio drew inspiration from the open work and semiotic ideas put forth by Eco, as well as the works of Claude Lévi-Strauss and Roland Barthes.

This study examines Berio's own essays and interviews on music and language and shows how he implicitly incorporated structural linguistic conceptions into his two works *Sinfonia* and *Coro* in the late 1960s and the early 1970s. Rather than aiming for a direct correspondence between linguistic and music syntax, Berio explored the concept of 'universality of experience' in music, referring to humanity's inborn ability to process and create music, similar to universal grammar in linguistics. A key argument is that this investigation into the unconscious and innate aspects of human musicality was Berio's approach to explore the relationship between music and meaning during the time. In particular, this study analyses the third movement of *Sinfonia* and *Coro*, focusing on their theatricality and the integration of sung

12 Berio, 'Una domanda a Luciano Berio', in *Interviste*, ed. Ottomano, 86.

13 Paolo Chirumbolo and Mario Moroni, 'Literature and the Arts in the 1960s', in *Neoavanguardia: Italian Experimental Literature and Arts in the 1960s*, ed. Paolo Chirumbolo, Mario Moroni, and Luca Somigli (Toronto: University of Toronto Press, 2010). Berio collaborated with Eco on *Thema (Omaggio a Joyce)* and with Sanguineti on various works, such as *Passaggio* (1963), *Laborintus II* (1965), and *A-Ronne* (1975). He later collaborated with Calvino on two works of musical theatre, namely *La vera storia* (1982) and *Un re in ascolto* (1984). For a more detailed discussion on the *neoavanguardia* movement, see Edoardo Sanguineti, *Ideologia e linguaggio*, ed. Ermino Riso (Milan: Feltrinelli, 1965, reprinted in 1964); the magazine *Il verri*, www.ilverri.it (accessed 30 March 2024).

14 See Luciano Anceschi, 'Metodologia del nuovo', in *Gruppo 63: La nuova letteratura, 34 scrittori, Palermo ottobre 1963*, ed. Nanni Balestrini and Alfredo Giuliani (Milan: Feltrinelli, 1964), esp. 9; see also the notion of 'chaosmos' in Umberto Eco, *The Aesthetics of Chaosmos: The Middle Ages of James Joyce* (Tulsa, OK: University of Tulsa, 1982), 62–71.

15 Nanni Balestrini, ed., *Gruppo 63. Il romanzo sperimentale* (Milan: Feltrinelli, 1966), 133.

or spoken texts. These large-scale orchestral compositions reflect ideas reminiscent of mid-century structural linguistics, including the theories of Jakobson and Chomsky. The well-known third movement of *Sinfonia* is chosen as a focal point because of its standalone nature, although similar ideas can be found throughout other movements. This study illustrates Berio's understanding of contemporary linguistic concepts, particularly the notion of 'distinctive feature', signification, and debates on language productivity. While language productivity – the ability to generate new linguistic elements – has been considered evidence of humanity's linguistic ability, Berio's two works exhibit a similar property, namely the 'infinite use of finite means', in their compositional model. The study also explores the concept of a 'theatre of the mind', that is, the evocation of drama and images in the audience's imagination, achieved through the convergence of music and language in these works. This evocation resonates with the influence of the *neoavanguardia* movement in which the portrayal of reality and truth is reflected through the medium's lens and formal structures. By evoking mental images that are shaped by the listener's unique experiences, this approach transcends the arbitrary relationship between the signifier and the signified. This can be viewed as Berio's resolution with regard to the intersection between sound and sense.

Existing literature exploring the intersection of music and language in Berio's works has primarily focused on aspects such as text–music relations, the unique use of voice and gestures, and the incorporation of phonetic elements.¹⁶ When examining Berio's third movement of *Sinfonia*, studies have concentrated on identifying and analysing the quotations used, the collage technique employed, and the social background surrounding the work.¹⁷ In the case of *Coro*, the adoption of African hockets and their political implications have been significant research topics.¹⁸ Martin Scherzinger, Ivanka Stoianova, and James Davis

16 To name a few: David Osmond-Smith, 'From Words to Music', in *Berio* (Oxford: Oxford University Press, 1991); Mila de Santis, 'Organizzare il significato di un testo', in *Luciano Berio: Nuove Prospettive*, ed. Ida de Benedictis; Stefano Oliva, 'Luciano Berio and the Problem of Musical Language', *Rivista italiana di filosofia del linguaggio* 14/1 (2020); Ulrich Mosch, 'Luciano Berio's Concept of Musical Instrument in the "Sequenzas"' and Claudia di Luzio, 'Reverberating History. Pursuing Voices and Gestures in Luciano Berio's Music Theatre', both in *Luciano Berio: Nuove Prospettive*, ed. Ida de Benedictis; See also Claudia di Luzio, 'Sanguineti e Berio, suono-voce-gesto', *Poetiche* VIII/3 (2006).

17 See the inventory of quotations in: David Osmond-Smith, *Playing on Words: A Guide to Luciano Berio's Sinfonia* (London: Routledge, 1985), 57–71; Peter Altmann, *Sinfonia von Luciano Berio. Eine analytische Studie* (Vienna: Universal Edition, 1977). See the discussion on grafting techniques in *Sinfonia*: Osmond-Smith, *Playing on Words*, 48; Catherine Losada, 'The Process of Modulation in Musical Collage', *Music Analysis* 27/2–3 (2008) and her another article 'Between Modernism and Postmodernism: Strands of Continuity in Collage Compositions by Rochberg, Berio and Zimmermann', *Music Theory Spectrum*, 31/1 (2009). See the discussion on the themes and text–music relations in: Michael Hicks, 'Text, Music, and Meaning in the Third Movement of Luciano Berio's *Sinfonia*', *Perspectives of New Music* 20/1/2 (1981); Alfred Schnittke, 'The Third Movement of Berio's *Sinfonia*: Stylistic Counterpoint, Thematic and Formal Unity in Context of Polystylistics, Broadening the Concept of Thematicism (1970s)', in *A Schnittke Reader*, ed. Aleksandr Vasil'evic Ivaskin, trans. John Goodliffe (Bloomington, IN: Indiana University Press, 2002); Francis Bayer, 'Thèmes et citations dans le troisième mouvement de la *Sinfonia* de Luciano Berio', *Analyse musicale*, 10 (1988); Markus Bandur, 'Berios *Sinfonia*, Joyces *Finnegans Wake* und Ecos Poetik', in *Musik-Konzepte Neue Folge* 128 (Munich: Edition text + Kritik, 2005).

18 See the discussion on African hocket, the techniques of using folk songs, and the political implication of *Coro* in: Martin Scherzinger, 'Luciano Berio's *Coro*: Nexus between African Music and Political Multitude', in *Luciano*

have shed light on the techniques of using folk songs, the political connotations within *Coro*, and the nexus between African music and the concept of a political multitude. While Berio's exploration of language in his works has been recognized, there remains a need for further examination regarding certain twentieth-century linguistic conceptions underlying his compositions, especially his proposition of the 'universality of experience' and 'musical phonology'.

In addition, the issue of music and meaning has been a topic of discussion among theorists and philosophers throughout history. In the twentieth century, commentators shifted from considering music as a language to exploring the meaning of music through semiotics, which examines music as a system of signs within a broader context. Semiotics, in particular, focuses on tracing patterns rather than specific content and seeks to uncover the underlying structure of a system instead of deciphering explicit meanings. Ethnomusicologists such as Bruno Nettl were intrigued by the relationship between musical segments and linguistic segments, including the application of phonemes in music. Musical semioticians such as Nicholas Ruwet and Jean-Jacques Nattiez performed paradigmatic analyses of musical compositions, examining the metalanguage within the system. This analytical approach can also be observed in the study of myths by Claude Lévi-Strauss, whose *The Raw and The Cooked* served as a major source of inspiration for Berio's *Sinfonia*.¹⁹ This holistic study aims to trace a signification system supported by twentieth-century discourses on structuralism, shedding light on the exploration of music and language from the perspective of linguistic and musical conceptions of the time.

Musical process as signification process in the third movement of *Sinfonia*

The third part of *Sinfonia* is well known for its use of quotations. This movement serves as an illustrative example in this study as it encapsulates a complete process of signification. Interestingly, Berio does not perceive the pre-existing materials as quotations or a collage but rather as a dialogue with the past. It is a harmonic journey in which he 'signals' the 'harmonic characters'.²⁰ This perspective aligns with his understanding of *gesture* and *sign* in music. According to Berio, musical sound, even in the form of a single note or timbre, carries historical significance, imbuing musical units with inherent meaning.²¹ Consequently, they evoke the listener's experiences associated with those specific musical elements, such as melodic shape, phrasing, or the instruments employed. The movement takes the listener on a musical journey, traversing repertoires of varying degrees of familiarity. The quotations

Berio: *Nuove Prospettive*, ed. Ida de Benedictis; Ivanka Stojanova, ed., *Chemins en musique* (Paris: Richard Masse, 1985), 181–98; James Davis, "Come and See the Blood in the Streets": Luciano Berio, "Coro", and the Affective Staging of the One-Crowd', *Music and Letters*, 100/4 (2019).

19 For further details on music and semiotics, refer to Raymond Monelle's summary: *Linguistics and Semiotics in Music* (Chur: Harwood Academic Publishers, 1992), 1–31.

20 Berio, 'Luciano Berio sulla nuova musica: Intervista di David Roth' (1976), in *Interviste*, ed. Ottomano at 119; Berio, 'Intervista con Luciano Berio di Eero Tarasti' (1991), in *Interviste*, ed. Ottomano, 247.

21 Luciano Berio, 'Del gesto e di Piazza Carità' (1963), in *Scritti sulla musica*, ed. Angela Ida de Benedictis (Turin: Einaudi, 2013).

contain their own references, including the composer, programme, key, and more. Although they appear fragmented, they are connected through textual commentary and grafting techniques, as elucidated by Catherine Losada.²² Nevertheless, in addition to the analyses of the grafting techniques, two semiotic issues warrant attention. First, the analyses shed light on how quotations are juxtaposed at specific moments or within a few bars. However, the arrangement of quotations within a network (i.e., the 'diachronic' approach) requires more attention, especially when the quotations recur in various forms. Second, certain gestures concerning performative modes, such as strings harmonics, staccato, and tremolo, clearly derive from specific quotations, extending beyond the analyses of melodic segments, rhythms, and harmonies. Furthermore, extra-musical associations, such as the water imagery linked to Debussy's *La mer* and the drowning scene in *Wozzeck*, hold significance among the quotations and relate to the topic of rainfall from the Bororo myth in the first movement. Traditional music analysis proves insufficient to explain the interrelationships between these gestures and extra-musical information.

As I suggest below, the arrangement of quotations in the movement demonstrates a parallel with the principles of phonological analysis and the structuralist conception, as exemplified in Lévi-Strauss's *The Raw and the Cooked*. These quotations are interconnected through *features*, which encompass both musical and extra-musical characteristics present in the music. In phonology, when two sounds vary by a single feature that alters the meaning, that feature is termed a 'distinctive feature' due to its crucial role. For instance, in English, the consonants /p/ and /b/ in words such as 'pan' and 'ban' differ solely in the feature of vocal cords voicing, and this minimal distinction gives rise to different meanings for the two sounds. Consequently, vocal cord voicing (or the distinction between 'voiced' vs 'voiceless' sounds) becomes a distinctive feature in English. Phonology, which is distinct from phonetics, focuses on the contrastive relationships among speech sounds in a specific language.²³ The arrangement of quotations in this movement, as is argued in this article, extends the mission of exploring 'musical phonology' undertaken by the Studio di Fonologia Musicale and explores how meaning is evoked through contrastive relationships among musical units. To begin with, we can draw on phonological analysis to identify and enumerate the 'features' of these sound units. The quotations can be dissected into their inherent features, including intervals, ornamentation, pitch organization, performative modes, and even extra-musical associations, in conjunction with the analysis of harmony, melody, and rhythm. By establishing a comprehensive list of these features, similar to a phonological analysis, we can identify the interrelationships among quotations, the evocation of meaning, and the creation of new musical materials.

Unlike other pieces that incorporate quotations, the references in *Sinfonia* appear fragmented within the overarching continuity of Mahler's Symphony No. 2 that serves as the *canus firmus*. Nevertheless, there is discernible logic in the arrangement of these quotations.

22 See Osmond-Smith, *Playing on Words*; and Losada 'The Process of Modulation in Musical Collage' and 'Between Modernism and Postmodernism'.

23 David Crystal, *The Cambridge Encyclopedia of Language* (New York: Cambridge University Press, 2000), 162.

When a quotation is introduced for the first time in the movement, there are always common features that are shared with other quotations. For instance, at the beginning, gestures from Mahler's Fourth Symphony and Debussy's *La mer* are superimposed. The use of open fifths (F \sharp –B in flute as in [Example 1a](#) and G \sharp –C \sharp in violin B as in [Example 1b](#)), despite being a tone apart, connect the two quotations in bar 4. Although these shared features justify the superimposition of the two quotations, their differences are equally significant. The prominent sonority created by the added acciaccaturas to the open fifths in Mahler's quotation, as well as the figure featuring string harmonics played by violin A, highlight the distinctiveness between the two quotations. As a result of these differences, these gestures acquire their own distinct and independent identities in rehearsal A. The acciaccaturas subsequently become associated with a new figure, as illustrated in [Example 1a](#). Similarly, the tremolo, prominent in the Debussy quotation, also becomes an independent gesture. It is initially repeated in the cello, as shown in [Example 1b](#), and later combined with other musical elements in subsequent sections, notably with the quotation from Ravel's *Daphnis et Chloé* (flutes) and another quotation from *La mer* (violins B and C) in rehearsal D. Conversely, a chordal figure featuring harmonics played by violin A re-emerges as a distinct gesture, lasting for 15 bars (see [Example 1b](#) for the chordal figure in violin A, which lasts from bar 11 until the end).

The open fifths serve as the common features shared by the Mahler and Debussy quotations, while the acciaccaturas, tremolos, harmonics, and other distinguishing features highlight their differences, analogous to the concept of *distinctive features* in phonological analysis. Through this comparison, it can be seen that the quotations have their own unique characteristics, similar to the original purpose of using distinctive features to differentiate meaning in a group of sounds, which aligns with the original purpose of applying distinctive features in language.²⁴ These distinctive features in musical materials detach from their original sources and become independent gestures.

In [Example 2](#), we see the transition to the quotation of *The Rite of Spring* layered atop the Mahler quotation. The acciaccatura played by the flute now exists as an independent gesture, detached from its original context. The chromatic triplets played by the strings are borrowed from the Mahler reference (Mahler Symphony No. 2, 3rd mvt, b. 347) and, as depicted in the example, are superimposed with the rhythmic pattern from *The Rite of Spring*.²⁵ These triplets, chromatic figures, and rhythmic patterns amalgamate with the anticipatory ostinato, setting the stage for the forthcoming quotation of *The Rite*. Subsequently, these features, including chained triplets, groups of four demisemiquavers, chromaticism, and repeating notes, re-occur as independent musical gestures, freely combined with other musical elements in later sections. Consequently, they gradually detach from their original sources and become standalone figures.

The juxtaposition of quotations in the Scherzo goes beyond mere playful manipulation; it involves a deconstructive process aimed at identifying the distinctive features of each quotation, allowing these features to become liberated from their original sources. Through this

24 See more in Crystal, *The Cambridge Encyclopedia of Language*, 164.

25 In Stravinsky's version, the rhythmic patterns are in quavers while Berio transcribed them in demisemiquavers.



a. The quotation of Mahler's Symphony No. 4 (bb. 2–5, flutes); the acciaccaturas combine with another figure (bb. 8–10; clarinets 2 and 3).

b. Debussy quotation (bb. 4–6).

Example 1 *Sinfonia*, 3rd mvt, quotations of Mahler's Symphony No. 4 and Debussy's *La mer*.

meta-musical analysis, the uniqueness of the musical materials is discernible, while the common features across the materials establish connections through association. In this context, metonymy, or a signifying chain (or 'endless chain', rehearsal D), plays a pivotal role in the first half of the movement, as the narrator engages in a stream of consciousness while envisioning the composition of the Scherzo. Existing materials are recalled individually through metonymy, which is triggered by similarities in rhythmic or melodic segments, common pitch collections, the use of chromaticism, and other related elements. This observation aligns with Losada's findings, which highlight how quotations are anticipated or introduced by similar melodic or rhythmic profiles derived from other quotations or the Mahler cantus firmus.²⁶

26 For instance, Losada points out that Berio's insertion of chromatic scales in the piece foreshadows the later inclusion of a Brahms component, achieved through the modification of chromatic layers in bars 323–9. Another example is the heterophonic treatment of the Mahler Scherzo in bars 168–9, where the accelerated rhythmic momentum coincides

Flutes

Clarinets in Bb

Timpani

Violin A&B

Violin C

Viola

Violoncello

Fl.

Cl.

Timp.

Vln. A&B

Vln. C

Vla.

Vc.

Chromaticism + triplets from Mahler's Symphony

Rhythmic pattern from *The Rite of Spring*

Rhythmic pattern from *The Rite* + chromaticism from Mahler's Symphony

Example 2 *Sinfonia*, 3rd mvt, rehearsal H, bb. 13-16.

with a quotation from *The Rite of Spring* starting in the subsequent bar. See Losada, 'The Process of Modulation in Musical Collage', 312-22.

The image displays a musical score for Example 3, illustrating citations of Ravel and Mahler. The score is divided into two systems. The first system includes parts for Bassoons, Contrabassoon, and Violin I. The second system includes parts for Bassoon (Bsn.), Contrabassoon (Cbsn.), and Violin I (Vln. I). Annotations with arrows point to specific musical figures: 'Mahler citation (first bassoon)' points to a passage in the Bassoons; 'Melodic figure in the Ravel citation' points to a passage in the Contrabassoon; 'Mahler citation (violin)' points to a passage in Violin I; and 'Common figure shared by the Ravel and the Mahler citations' points to a passage in the Violin I. Solid lines indicate Ravel citations, and dotted lines indicate Mahler citations. The score includes dynamic markings such as *p* and *f*, and rests.

Example 3 *Sinfonia*, 3rd mvt, rehearsal C, b. 20, to rehearsal D, b. 4: solid line = Ravel citation; dotted line = Mahler citation.

As demonstrated in [Example 3](#), there is an instance where an unremarkable melodic figure, initially played by the bassoons and contrabassoons, may be challenging to identify in isolation. This figure, borrowed from Ravel's *La valse*, is subsequently repeated multiple times by the bassoons until the same figure in the Mahler cantus firmus is evoked. The presentation of these references mirrors the cognitive process of recollecting particular experiences through associative memory. Following this transition, the Ravel quotation undergoes further elaboration in the next episode.

The factors that imbue a quotation with its distinct identity extend beyond melodic or rhythmic figures and can encompass any musical information that sets two gestures apart. In rehearsal C, we can see the superimposition of the *idée fixe* from Berlioz's *Symphonie fantastique* with the Hindemith counterpoint layered atop the Mahler cantus firmus. Here, the timbre of flute, or the 'flute-ness', assumes an independent feature that establishes connections with other musical elements.²⁷ Consequently, the 'flute-ness' combines with the Mahler fragment in the strings (bb. 2–4, as shown in [Example 4](#)). Through multiple

²⁷ This aligns with Berio's description of 'soprano-ness' and 'tenor-ness' in his discussion on his theatrical work, *La vera storia*, in the Norton Lecture. See Luciano Berio, *Remembering the Future* (Cambridge, MA: Harvard University Press, 2006), 110–11.

The image shows a musical score for Example 4, which is rehearsal C, measures 2-4 of the 3rd movement of *Sinfonia*. The score includes staves for Flute 1, Flute 2&3, Piano, Keyboard, Violin A, and Violin B. A box labeled 'flute-ness' + Mahler is positioned above the Piano and Keyboard staves. A solid line is drawn around the Flute 1 staff. A dotted line is drawn around the Piano and Keyboard staves. A bold line is drawn around the Piano and Keyboard staves. A dashed line is drawn around the Piano and Keyboard staves.

Example 4 *Sinfonia*, 3rd mvt, rehearsal C, bb. 2-4: solid line in Flute 1 = Berlioz's *idée fixe*; dotted line = Hindemith citation; bold line = Mahler citation; dashed line = Mahler citation combined with the timbre of flute.

comparisons, the 'flute-ness' emerges as a distinctive feature that distinguishes it from other musical attributes.

Hence, it is pertinent to examine the movement in conjunction with the language system, with a focus on the phonological characteristics of the existing musical segments. To facilitate this analysis, I suggest compiling a list of distinctive features for the citations. The citations can be described by delineating a series of features, using the '+' and '-' signs to indicate their presence and absence, similar to phonological analysis familiar to Berio. This comprehensive list of features encompasses melodic, harmonic, tonal, and rhythmic representations as well as ornaments, performative modes (e.g., tremolo, harmonics, and glissando), stylistic devices (e.g., pointillistic writing), and extra-musical information (including the composer and text of the original sources).

For instance, the features of the Mahler and Debussy quotations shown in Example 1 can be listed as follows, alongside their pitch and rhythmic organization. The series of features can be expanded until it adequately distinguishes between two entities.

Citation from Symphony No. 4: [+open fifths] [+staccato] [+acciaccatura] [-harmonics]. . .
 Citation from *La mer*: [+open fifths] [+tremolo] [+harmonics] [+water] [-staccato]. . .

In fact, during the late 1960s, many music scholars and composers embraced the phonological method for music analysis. Nicholas Ruwet, a friend of the Darmstadt circle, and Simha Arom, whose works were known by Berio, employed 'paradigmatic analysis' in musical

semiotics, whereas François-Bernard Mâche advocated for the use of Jakobsonian phonological models to identify pertinent sonorous features in music.²⁸ Pierre Schaeffer also drew comparisons between phonemes and their distinctive features with musical values such as pitch, intensity, timbre, and duration, thereby establishing a parallel between music and language.²⁹ Whether Berio was aware of these analyses is uncertain; nonetheless, a tendency of paradigmatic thinking among avant-garde composers cannot be dismissed. In addition to Schaeffer's parameters, I also incorporate performative modes and extra-musical information. For each quotation, an extensive list can be constructed, indicating the presence or absence of specific features. Although the following examples of distinctive features do not constitute an exhaustive list, they serve to illustrate the approach:

Symphonie fantastique: [+flute] [+dance] [+stepwise motion]

La valse: [+chromaticism]

Daphnis et Chloé: [+dance] [+flute] [+colour]

The Rite of Spring: [+ostinato] [+triplets] [+dance]

Agon: [+triplets] [+alternation between whole tone and half tone]

Kammermusik: [+counterpoint]

However, merely juxtaposing musical materials with distinctive features is insufficient for musical arrangement and development. Textual commentary plays a crucial role in the movement, serving as a guidepost for musical progression. Berio, however, does not rely solely on literary works as the text, although phrases from Samuel Beckett make appearances. He crafts the text as a self-reflexive narrative. The narrator assumes the role of a composer, brainstorming musical elements to be included in this movement, titled 'In ruhig fliessender Bewegung'. The narrator engages in a creative process of recalling various repertoires and selecting materials for the music. It is as if the music unfolds before us as an embodiment of his artistic exploration and decision-making. The narrator then directly communicates and shares the theatrical time with the audience during the second half of the movement. Influenced by the concept of metatheatre, the musical quotations respond to or interact with the narrator, who acts as the composer of this movement, as if they possess a life of their own.³⁰ Through this metatheatrical approach, the movement itself transforms into a stage. Berio stressed that his music theatre focuses on the complementarity between music, language, and stage, rather than relying on dramatic contrasts.³¹ This movement can be seen as an example, as suggested

28 See Nicholas Ruwet, 'Méthodes d'analyse en musicologie', *Revue belge de musicologie*, XX (1966), 65–90; Simha Arom, 'Essai d'une notation des monodies à des fins d'analyse', *Revue de musicologie* 55/2 (1969); François-Bernard Mâche, 'Language et musique', *La Nouvelle Revue Française* 196/17 (1969).

29 Pierre Schaeffer, *Treatise on Music Objects* (1966), trans. Christine North and John Dack (Oakland, CA: University of California Press, 2017), 232–48.

30 Berio's discussion on Lionel Abel's concept of metatheatre can be found in Luciano Berio, 'Problemi di teatro musicale' (1967), in *Scritti*, ed. Ida de Benedictis, 53.

31 See Luciano Berio, 'Carrelate musicali: Intervista di Andrew Clark e Gerhard Persché' (2000), in *Interviste*, ed. Ottomano, 408. For more details on Berio's concepts of music theatre, see Giordano Ferrari, ed., *Le théâtre musical*

in this article. The inclusion of textual commentary here creates a scenic dimension within this invisible theatre, incorporating visual elements and merging them with the textual and musical components. Phrases such as 'competition on the stage', 'eight female dancers', 'dialogues in the dunes', 'obsession with the chromatic', and 'words falling' contribute to this scenic dimension. It becomes the platform for the interaction between music and text, enabling the visualization of music and providing signposts for the behaviours of the musical characters.

Furthermore, Berio embraces a form of 'controlled randomness' as a vital element in the movement, allowing the organization of the musical materials to be shaped. This approach, reminiscent of metatheatre, grants the derived musical materials from quotations a sense of autonomy, as if they were 'musical characters' endowed with free will. For instance, Hindemith's *Kammermusik* is played following the commentary 'nothing more restful than chamber music'. Similarly, a six-note descending and ascending motif from Mahler's Symphony No. 9 emerges when the narrator complains that 'the curtain comes down for the ninth time'. These 'characters' may comply with or reject the suggestions of the narrator-as-composer. In Rehearsal I, Stravinsky's quotation from *The Rite of Spring* appears, emphasizing the ostinato between C and F# in timpani and the parallel fourths in the strings. However, after the text narrates 'the earth would have to quake', referencing the 'Dance of the Earth', the *Agon* 'character' appears instead, followed by the narrator's commentary that 'it isn't earth', drawing from Beckett's text. This reveals that the concept of metatheatre extends beyond the interpretation put forth by Michael Hicks, who considers only the singers in the movement to be characters in the work. In fact, the vision of metatheatre encompasses a broader scope in which musical materials themselves assume the role of dynamic characters.³²

The musical characters not only possess individual agency but also interact with one another, seemingly guided by their own free will. When these characters encounter each other, they engage in a process of combination or rejection. For instance, in [Example 5](#), the Mahler fragment (taken from Mahler Symphony No. 2, third movement, bb. 4–5 violin) is transposed up a minor third, seamlessly merging with Berlioz's quotation (from *Symphonie fantastique*, the second movement, bb. 135–7). This fusion of the two quotations creates a hybrid phrase, situated in the lower register of violin C and viola. Through the power of association, this hybrid phrase then evokes a motif similar to that found in Mahler Symphony No. 9.

The interaction between the musical 'characters' is not always felicitous. [Example 6](#) illustrates how the Stravinsky quotation from Triple Pas-de-Quatre is overlaid with the Mahler quotations in rehearsal L. Initially, the *Agon* 'character' is present, but it quickly fades away, and the dominant G major sonority of the Mahler cantus firmus takes precedence. The 'character' of *Agon* is ultimately rejected following the interaction.

de Luciano Berio, vols. 1 & 2 (Paris: L'Harmattan, 2016); Claudia di Luzio, *Vielstimmigkeit und Bedeutungsvielfalt im Musiktheater von Luciano Berio* (Mainz: Schott, 2010).

32 Hicks, 'Text, Music, and Meaning in The Third Movement of Luciano Berio's *Sinfonia*'.

The image displays a musical score for Example 5, featuring six staves: Flutes, Clarinets, Soprano, Violin B, Violin C, and Viola. The score is annotated with several boxes and lines indicating citations. A box labeled 'Berlioz's S.F.' is positioned above the Flutes staff. A box labeled 'Transposed Mahler cantus firmus' is placed above the Violin B staff, with a dotted line indicating a citation from Mahler's Symphony No. 2. A box labeled 'Mahler Symphony No. 9' is placed above the Violin B staff, with a bold line indicating a citation from Mahler's Symphony No. 9. A box labeled 'Berlioz + Mahler cantus firmus' is placed below the Viola staff, with a dashed line indicating a combination of citations from Berlioz and Mahler's Symphony No. 2. The Soprano staff also contains a box labeled 'Mahler Symphony No. 9' with a bold line indicating a citation. The score is written in 3/8 time and includes various musical notations such as notes, rests, and dynamic markings.

Example 5 *Sinfonia*, 3rd mvt, rehearsal F, bb. 3–8: solid line = Berlioz citation; dotted line = Mahler citation from Symphony No. 2; bold line = Mahler citation from Symphony No. 9; dashed line = combination of the citations of Berlioz and Mahler Symphony No. 2.

The incorporation of this ‘controlled randomness’ in *Sinfonia* is somewhat different from Eco’s concept of the open work. While there are instances for chance elements, such as performers inserting the conductor’s name and the titles of other pieces during the performance, the utilization of randomness to guide the behaviours of the ‘music characters’ occurs within the composition process. This approach is reminiscent of John Cage’s *Music of Changes*, in which chance plays a significant role in shaping the musical outcome. The integration of metatheatrical elements into the composition serves as a framework to direct the musical development while embracing randomness to organize the musical materials.

The movement goes beyond merely juxtaposing quotations; instead, the musical units undergo transformation as the movement progresses. Throughout its course, the recurring fragments from various references, including the Mahler citation, gradually become shorter and more simplified. Osmond-Smith aptly observes that Mahler’s third movement is reduced to skeletal features before emerging as autonomous.³³ However, this reduction is not exclusive to Mahler’s citations alone. As the movement progresses, the musical figures begin to detach themselves from their original sources. This reduction can manifest in different ways, such as featuring only a small fragment from the quotation, as exemplified by the melodic fragments from the Mahler cantus firmus shown in Example 7a. Additionally, distinctive gestures can serve as symbolic elements that retain the identity of the references, as demonstrated in Example 7b. The rhythmic figures borrowed from *Agon* and the whole-tone

³³ Osmond-Smith, *Playing on Words*, 46.

The image displays a musical score for Example 6, consisting of ten staves. The staves are labeled as follows from top to bottom: Flutes, Bassoons, Trumpets, Alto, Bass, Keyboard 1, Keyboard 2, Violin A, Violin B, and Contrabass. The score is written in a common time signature. Annotations include solid lines and dotted lines. A text box on the right side of the score states: "The combination of Mahler and Stravinsky citations to form a larger unit".

Example 6 *Sinfonia*, 3rd mvt, rehearsal L, bb. 10-18: solid line = Mahler citation; dotted line = Stravinsky citation.

motif derived from *La mer* are examples of these distinctive gestures, characterized by their intrinsic features.

The gestures continue to develop through variations and are interwoven with distinctive elements from other materials. Moreover, the musical elements undergo further simplification and abstraction as the composition progresses. For instance, a wave-shaped melodic sequence found in both the Mahler and the Hindemith quotations is simplified and combined with the rhythmic pattern from *Agon* (the second figure of [Example 7b](#), in retrograde form), as shown in

The image displays a musical score for 'Example 6 Continued'. The score is arranged in a vertical stack of staves for various instruments. From top to bottom, the staves are: Flute (Fl.), Bassoon (Bsn.), Trumpet (Tpt.), Alto Saxophone (A.), Bass (B.), Keyboard 1, Keyboard 2, Violin I (Vln. I), Violin II (Vln. II), and Cello (Cb.).

Key features of the score include:

- Flute (Fl.):** A dotted box highlights a melodic phrase in the first measure, and a solid box highlights a sequence of notes in the fourth measure.
- Trumpet (Tpt.):** A solid box highlights a melodic phrase in the second measure, and another solid box highlights a sequence of notes in the fourth measure.
- Bass (B.):** A text box with a white background and black border is placed over the staff, containing the text: "The invasion of the G major sonority (the dominant of the Mahler citation) in the keyboards".
- Keyboard 1 and Keyboard 2:** A large solid box encompasses the entire section for both keyboards, indicating a significant musical event.
- Violin I (Vln. I) and Violin II (Vln. II):** A dotted box highlights a melodic phrase in the first measure of both staves.
- Cello (Cb.):** A solid box highlights a sequence of notes in the fourth measure.

Example 6 Continued.

Example 8a. **Example 8b** shows the abstraction of chained minor thirds, a recurring motif throughout the movement. These chained thirds are shared by the Mahler cantus firmus and the Schoenberg citation in 'Peripetie' (an ascending sequence of thirds in bar 2 of Schoenberg's piece). The chained thirds gradually assume an independent character and



a. Recurring melodic fragments taken from the Mahler cantus firmus.



b. Gestures that are more recognizable and recur more often. (Left and middle: figures from *Agon*; Right: a whole tone motif from *La mer*)

Example 7 *Sinfonia*, 3rd mvt, distinctive gestures in later sections.

frequently reappear in varied forms. Similarly, the prominent chained seconds in the *Wozzeck* citation are abstracted and blended with glissando and tremolo gestures, as shown in [Example 8c](#). Another example of abstraction is observed in the citation from *Agon*, which highlights the alternating use of whole tone and semitone intervals, as illustrated in [Example 8d](#). Such abstraction shares some similarities with Schaeffer's concept of sound object, wherein the listener undergoes a process of abstraction by 'stripping down' and establishing relationships between objects based on their concrete qualities.³⁴ This abstraction process summarizes the listening experience and enables the identification of entities within a structural framework. Further, it affirms Thomas Peattie's observation that Berio's transcriptions reflect his actual perception of the sources.³⁵ For instance, Berio's annotation on his own Mahler score regarding the *Wozzeck* citation reveals his conception of chained seconds as a rapid chromatic ascent.³⁶

Towards the end of the movement, the abstraction process becomes even more prominent. The simplified gestures gradually lose their direct association with their original sources and instead appear as abstract musical symbols, especially when they recur more frequently. These symbols form intricate patterns, diminishing the gestures' connection to their initial contextual origins within the new contexts.³⁷ For instance, in [Example 9](#), all the figures featuring the pitch set B \flat -A-G \sharp -F \sharp derive from quotations. The seconds played by flutes and violins represent an abstraction of the chained seconds in *Wozzeck*. The triplets in the piccolo part signify the identity of the *Agon* citation, and the rhythmic pattern (a group of four demisemiquavers) recalls a similar pattern found in *The Rite of Spring* citation. However, as these musical features undergo multiple recombinations, the memory of their original

34 Schaeffer observes that in the process of listening, musical objects are abstracted, allowing the identification of their qualities and the establishment of a meaningful system. In this context, Schaeffer references André Lalande's definition of abstraction as a mental activity that isolates an element – be it a quality or a relationship – from a representation of a concept, focusing on it attentively while disregarding the rest. Schaeffer, *Treatise on the Musical Objects*, 250.

35 Thomas Peattie, 'Luciano Berio's Nineteenth Century', *Contemporary Music Review* 38/3-4 (2019).

36 Peattie, 'Luciano Berio's Nineteenth Century', 426.

37 See the similar description of sign in Berio, 'Del gesto e di Piazza Carità' (1963), in *Scritti*, ed. Ida de Benedictis, 31.



(combined with the rhythmic pattern in *Agon*)

- a. Wave-shaped melodic sequence (Top: rehearsal A, bb. 7–9, violin A, cited from Mahler Symphony No. 2; Middle: rehearsal A, bb. 21–2, violin solo, cited from Hindemith *Kammermusik*; Simplified figure: rehearsal H, bb. 7–10, oboe)



- b. Chained thirds (Top: rehearsal V, bb. 3–4, horns; Bottom left: rehearsal V, bb. 1–3, keyboard; Bottom Right: rehearsal J, bb. 1–2, oboes)



- c. Chained seconds (Top: rehearsal S, bb. 5–6, violin A; Bottom left: rehearsal V, bb. 6–11, violin C; Bottom right: rehearsal S, b. 14, trumpets)



- d. Alternation between tone and semitone intervals (Top: rehearsal J, bb. 11–14, flutes, cited from *Agon* bb. 108–9; Bottom left: rehearsal L, bb. 8–9, trumpet; Bottom right: rehearsal L, b. 14, flutes)

Example 8 *Sinfonia*, 3rd mvt, musical gestures' development into abstract forms.

context weakens. These musical symbols become more neutral, providing a blank slate ready to be assigned new values in new contexts. The focus now shifts towards the musical elements themselves, rather than the identification of their specific sources.

The image shows a musical score for three measures of music. The instruments are Flutes, Piccolo, Clarinets, and two Violin C parts. The Flute part has a melodic line with slurs and accents. The Piccolo part has a rhythmic pattern with triplets. The Clarinet part has a complex rhythmic pattern with slurs and accents. The Violin C parts have long, sustained notes with slurs and accents.

Example 9 *Sinfonia*, 3rd mvt, rehearsal U, bb. 1-3.

The process of abstraction bears resemblance to the evolution of language, wherein symbols were developed to codify abstract ideas derived from concrete objects. In particular, ideograms or ideographs emerged as representations of abstract or conventional meanings that are detached from their direct links to external reality. During the mid-twentieth century, linguists and semioticians began to explore methods of language formation and symbolization. An example is the work of Charles K. Bliss, an Austro-Hungarian semiotician, who devised a system known as Semantography (or Blissymbols) and published his work in 1965.³⁸ Semantography features several hundred basic symbols, each of which represents a specific concept. New symbols can be generated to represent novel ideas. While it remains uncertain whether Berio was aware of Semantography, the process of symbolizing language is closely related to the idea of gesture and semiotic notions that he had been exploring.³⁹ Moreover, it aligns with the concept of language productivity, highlighting the capacity to generate new meanings and concepts through symbolic representation.

Productivity of music and ‘the infinite use of finite means’

Throughout his career, Berio consistently emphasized that music is *not* a language, despite his exploration of the interplay between music and language.⁴⁰ In the 1960s, he proposed two main reasons to support this viewpoint: 1) in music, the signifier and the signified cannot be separated because they are inherently interconnected; and 2) while language operates as

38 See Charles K. Bliss, *Semantography (Blissymbols)* (Sydney: Semantography (Blissymbols) Publications, 1965).

39 See Berio's discussion on gesture and sign, 'Del gesto e di Piazza Carità', in *Scritti*, ed. Ida de Benedictis.

40 Berio further reinforced this assertion in the late 1990s, solidifying it after years of exploration and experimentation. See his interview in Theo Muller, "Music is not a solitary act": Conversation with Luciano Berio, *Tempo* 199 (1997), 16–20.

a closed system where a limited set of rules can generate an infinite number of sentences, music functions as an open system that relies on experiential references.⁴¹ Although the comparison between music and language is debatable, the Scherzo serves as an exemplification of Berio's second argument. Berio employs quotations as reference points for the listeners, establishing a system that progresses from reliance on these references to one governed by 'rules'. These 'rules' include the identification of distinctive features, abstraction of musical signs, interplay between musical features as if they were characters, and commentary between the musical and textual levels. The movement embodies an open schema that begins with musical quotations and ends with a self-generating process through the combination of musical features.

I argue, however, that Berio's ambition goes beyond illustrating the symbolization process to explore the productivity of music as signs. This conceptual idea aligns with the openness of language discussed during the mid-century. The notion of 'the infinite use of finite means', which explores how a limited set of linguistic items can generate an infinite number of sentences, received significant attention in linguistics around the 1960s, especially concerning whether this openness is a property of language. The idea of 'the infinite use of finite means' was initially proposed by Wilhelm von Humboldt in the nineteenth century. In 1967, Chomsky developed this idea further within the framework of generative grammar to explore the fundamental properties of language.⁴² The notion of 'open-endedness', a term coined by the American linguist Charles Hockett, is considered one of the universals of language. It refers to the property that humans 'continually creat[e] new expressions and novel utterances by manipulating their linguistic resources to describe new objects and situations'.⁴³ With this ability, humans can produce and understand entirely new utterances. This concept aligns closely with what *Sinfonia* exemplifies. It assumes that new messages are created by freely blending, analogizing, or transforming existing ones, and that both new or old elements can acquire new semantic interpretations based on circumstances and context.⁴⁴ Berio was well aware of language creativity, as he discussed this subject in his article 'Meditation on a Twelve-Tone Horse', even though he did not relate it to any of his works. He refers to Chomsky's proposition of the deep level of language that surpasses the examination of 'linguistic performance', which can constrain the creative potential of language. Berio explicitly notes the notion of the 'infinite use of limited means' ('uso infinito di mezzi limitati') as he discusses this idea.⁴⁵ As I have shown, the Scherzo reflects this concept as its structure theoretically allows for the generation of an infinite number of materials based on finite

41 Luciano Berio, 'Meditazione su un cavallo a dondolo dodecafonico' (1965), in *Scritti*, ed. Ida de Benedictis, 38.

42 Chomsky's discussion was more elaborated in his later work. See Noam Chomsky, *Cartesian Linguistics: A Chapter in the History of Rationalist Thought* (Cambridge: Cambridge University Press, 2009), 69–77.

43 George Yule, *The Study of Language* (Cambridge: Cambridge University Press, 2006), 10–11. See also Charles Hockett, 'The Origin of Speech', *Scientific American*, 203 (1960).

44 See Joseph Greenberg, 'The Problem of Universals in Language', in *Universals of Language*, ed. Joseph Greenberg (Cambridge, MA: MIT Press, 1961), 11.

45 See Berio, 'Meditazione su di un cavallo a dondolo dodecafonico', 39.

means. It is probable that by attempting to demonstrate the productivity of music, Berio probes the possibility that music shares similar properties with language.

The movement indeed resembles a 'generator', as described by Berio.⁴⁶ The introduction of musical references initiates a huge machine that churns and combines the initial musical elements and features, generating new materials in the process. The movement reflects a machinic approach that combines analysis and creativity within a single work.⁴⁷ Meanwhile, the inclusion of metatheatricality within this mechanical structure introduces a form of randomness, creating the illusion that other factors or human decisions are involved.⁴⁸ The proliferation of these materials contributes to the formation of a self-generating, open-ended, and complex structure. This also explains why Berio viewed the musical process as a solution to the intersection between sound and sense,⁴⁹ as establishing such signification relationships requires time and repetitions.

Berio's development of his own semiotic system extended beyond *Sinfonia*. In his later choral piece, *Coro*, he further explored the notion of innate musical ability in humanity, drawing from our cognitive understanding of language.

Exploration of 'universal musical grammar' in *Coro*

Berio delves further into the underlying principles of his signification system in *Coro*, a choral piece that encompasses styles of folk songs and different modes of setting to music, such as African heterophony and counterpoint.⁵⁰ The ensuing discussion focuses on the two modifications in *Coro* that facilitate the productivity of musical and textual elements. The first one involves the application of recursion, wherein rules of the same musical techniques are employed. This recursive approach allows for the generation of an infinite array of materials from a finite set of these 'rules'. The second one revolves around the use of diverse devices that establish connections between sound and meaning. These devices serve to continually

46 Berio described the third movement as a 'generator': 'Ce mouvement est traité comme un "container" ou, plutôt, comme un générateur, à l'intérieur duquel prolifèrent un grand nombre de références musicales, de Bach à Schönberg, de Beethoven à Strauss', cited in Bayer, 'Thèmes et citations', 72.

47 Bruce Quaglia examines how the incorporation of machinic practice in Berio's works transforms materials from other works, giving rise to new trajectories. Quaglia draws comparisons between this assemblage approach, reminiscent of a network, and Deleuze's concept of the 'machinic assemblage' in *A Thousand Plateaus*. Bruce Quaglia, 'Transformation and Becoming Other in the Music and Poetics of Luciano Berio', in *Sounding the Virtual: Gilles Deleuze and the Theory and Philosophy of Music*, ed. Brian Hulse and Nick Nesbitt (Abingdon: Routledge, 2010).

48 During the technologically infused Cold War era, the distribution of the human and machinic agency became a significant concern for avant-garde composers, as evidenced in electronic music and aleatory music. See more in Jennifer Iverson, *Electronic Inspirations: Technologies of Cold War Musical Avant-garde* (Oxford: Oxford University Press, 2019). The critic Wolf-Eberhard von Lewinski also commented on the works of Stockhausen, Boulez, Nono, and Berio, noting their individual attempts to uphold human freedom against the demands of the machine or mechanistic elements in music. Following the reintegration of the human element into music, these artists aimed for artwork to once again become a living organism, as highlighted by von Lewinski's observation. Cited in Martin Iddon, *New Music at Darmstadt: Nono, Stockhausen, Cage, and Boulez* (Cambridge: Cambridge University Press, 2013), 192.

49 Berio, 'Intervista con Luciano Berio di Philippe Albèra e Jacques Demierre', in *Interviste*, ed. Ottomano, 150.

50 See author's note: www.lucianoberio.org/node/1434?1011856635=1 (accessed 5 March 2024).

generate new musical and textual elements. The devices include onomatopoeia, sonic puns, semantic ambiguity, and nonsense syllables.

Coro is a piece for forty voices and instruments, incorporating folk songs that are imitations of a particular style.⁵¹ Berio's *Coro* is a more ambitious project that explicitly explores the notion of the 'universality of experience' in music. As its core, *Coro* embodies Berio's vision of seeking a common musical 'language' (organizing principles) capable of facilitating universal communication between musicians and listeners.⁵² Below, I examine two features in *Coro* that relate to this universality and its connection to humans' innate ability, which have received little attention so far. First, Berio places significant emphasis on folk songs and their melodies. Folk songs can be regarded as musical versions of myths transmitted through oral traditions. In the twentieth century, myths were extensively studied, especially for their formation and a priori experience. In addition to the inherent knowledge reflected in the content of myths, the systematic transmission of myths across generations indicates that humans possess a cognitive capacity to recreate and modify them, much like language.⁵³ For Berio, folk songs and their melodies served as a connection to this a priori experience within a community. He believed that melodies reflect the natural collective creation in a group and serve as a meeting point for sociocultural classes.⁵⁴ This perspective explains why the folk songs in *Coro* address the universal themes of work and love, resonating with shared human experiences.

Another notable feature of *Coro* is Berio's adoption of various modes of setting music, such as hocket and canon. Berio consistently explored the organizing principles in music, which he often referred to as 'grammar'. These organizing principles serve as hints for his investigation into the existence of a 'universal music grammar'⁵⁵ that parallels humanity's ability to understand linguistic grammar. A significant source of inspiration for Berio came from the work of ethnomusicologist Simha Arom, particularly his discovery concerning African hockets.⁵⁶ Arom observes that the horn ensemble of the Banda-Linda tribe in Africa spontaneously creates musical patterns in the form of melodies under the surface of polyrhythmic hockets. These musical patterns consistently follow a structural model, unbeknown to the musicians themselves.⁵⁷ Arom's findings regarding the hidden melodies in African hockets reinforced Berio's conviction in the relationship between melody and the universality of experience.

In the 1960s, linguists proposed the idea of a universal deep structure, suggesting the existence of an underlying universal deep grammar shared by all languages.⁵⁸ The presence of

51 Berio, 'Intervista con Luciano Berio di Philippe Albèra e Jacques Demierre', in *Interviste*, ed. Ottomano, 154.

52 See Osmond-Smith ed., *Two Interviews* (New York: Marion Boyars, 1985), 78–9.

53 Noteworthy examples that explore the intersection of myth and language include Lévi-Strauss's study of Bororo myth in *The Raw and The Cooked* and Vladimir Propp's *The Morphology of Folktales*, which Berio was familiar with.

54 Osmond-Smith, *Two Interviews*, 78–9. See also the episode titled 'Non tanto per cantare' from Berio's TV programme *C'è musica e musica*. Berio discussed the features and significance of folk songs in the episode. Transcriptions in Angela Ida de Benedictis ed., *Una Polifonia di Suoni e Immagini* (Milan: Feltrinelli, 2013), 75–83.

55 Berio, 'Translating Music', in *Remembering the Future*, 60.

56 See author's note at www.lucianoberio.org/coro-authors-note?1011856635%C2%BC1 (accessed 30 March 2024).

57 Simha Arom conducted fieldwork in the 1970s, and his findings were fully elaborated in his book published in the 1990s. See Simha Arom, *African Polyphony and Polyrhythm* (Cambridge: Cambridge University Press, 1991), 313–504.

58 Dwight Bolinger, *Aspects of Language* (New York: Harcourt, Brace & World, 1968), 18.

linguistic universals implies that humans possess a genetically determined linguistic ability to process and create language, as evinced by Chomsky's suggestion of universal grammar in our language faculty.⁵⁹ Around the same time, Berio felt the need to identify the deep structure related to the organizing principles in music, akin to the concept of generative grammar.⁶⁰ In fact, discussions on universal musical grammar and innate musical competence emerged concurrently in ethnomusicology. Through his study of the Venda, an African tribe from the Transvaal region, John Blacking recognizes that universal musical competence is 'the innate or learned capacity to hear and create patterns of sound which may be recognized as music in all cultural traditions'.⁶¹ The Venda, as Blacking shows, do not consider anyone to be unmusical. They constantly invent musical conventions by introducing new features and recreating foreign music.

Although Berio did not explicitly reference Blacking's work, it comes as no surprise that Berio incorporates African hocket – a prominent musical technique – in *Coro*, given his goal to uncover the universal music grammar of humanity. This inclusion occurs alongside other composition styles such as canon, lied, and counterpoint. African hocket first appears in Episode IX, following the Indian chant. Similar to Arom's discovery, a silhouette melody emerges from the hocket, discernible by tracing the melodic fragments in the winds. This melody is then captured by the sopranos and altos, as shown in [Example 10](#).

The elaborate use of the African hocket in Episode XI intertwines with other musical techniques, providing new pitches. [Example 11a](#) shows that, in the first two bars of Episode XI, the piano part outlines the silhouette melody created by the hockets. This silhouette melody further develops in two ways. First, the alto part sings in parallel with the piano melody, with augmentation and some inflections. Second, the piano melody proliferates through the use of canon, as cited in [Example 11b](#), allowing the melody to superimpose itself at various entry points. Reciprocally, the canon played by the piano provides more pitch choices for the hockets, resulting in a denser texture from bar 3 onwards. As the piece progresses, the hockets in the winds persist, accompanied by rhythmic variations in nearly every measure starting from bar 8. These hockets now provide a layered, distinct melody to the piano part. Additionally, independent melodic or rhythmic figures emerge as offshoots during this process. For instance, chromatic figures reminiscent of the Indian chant can be observed in the chant singing 'avavavaya', while syllabic patterning appears in preceding sections.

The significance lies not in the expansion of available pitches or the change of harmonic and rhythmic structure, but rather in the recursive nature of the musical techniques employed

59 Chomsky made a clear distinction between linguistic competence and linguistic performance. Linguistic performance refers to what a speaker actually says, which may not fully reflect their knowledge of the language. In contrast, linguistic competence refers to the speaker's mental grammar, which encompasses their understanding and knowledge of the language. Chomsky emphasized that the focus of a grammarian should be on the speaker's linguistic competence rather than solely analysing the speech produced in linguistic performance. See Noam Chomsky, *Aspects of the Theory of Syntax* (1965) (Cambridge, MA: MIT Press, 2014), 1–65.

60 Berio, 'Meditazione su un cavallo a dondolo dodecafonico', in *Scritti*.

61 See John Blacking, 'Towards a Theory of Musical Competence', in *Man: Anthropological Essays Presented to O F Raum*, ed. E. J. de Jager (Cape Town: C. Struik, 1971), 21.

The image shows a musical score for a brass and woodwind section. The instruments listed on the left are Horns 1, 2, and 3; Trumpets 1, 2, 3, and 4; Trombone 1, 2, 3, and Bass Trombone; Soprano; and Alto. The score is written in 8/8 time and consists of five measures. The music is characterized by complex rhythmic patterns and frequent changes in pitch and meter. Some notes are circled, and there are various accidentals and dynamic markings throughout the score.

Example 10 *Coro*, Episode IX, bb. 22-26: the woodwinds are not shown in the example. The A notes of the soprano in the third and the fifth bars are obtained from the clarinet and the flute parts which are not shown here.

to continuously generate new materials. The contrapuntal technique is repeatedly applied to the same melodic materials, resulting in the proliferation of new pitch collections within the section. Similarly, the hoquet is employed multiple times, incorporating existing materials while generating new melodic materials. In fact, the interplay between the hoquet and counterpoint conceptually resembles a hoquet itself. This meta-hoquet perpetually shuttles the melodic materials between the piano and the winds after each musical operation. Other

Silhouette melody formed from the hocket

Change of harmonic pattern in piano due to the rhythmic shift in the hocket

a. *Coro*, Episode XI, bb. 1–8.

b. *Coro*, canon in the piano part (Episode XI, bb. 1–8).

Example 11 *Coro*, Episode XI, bb. 1–8. © Copyright 1976 by Universal Edition S.p.A., Milano assigned to Universal Edition A.G., Vienna.

musical materials, such as the melody sung by vocals, emerge as offshoots of this meta-hocket. The bouncing property of the hocket allows the music to ‘keep going’ by incorporating new elements in a relay-like fashion along the flow of time. Berio further expands this exchange by

involving additional participants. **Example 12** shows that the *hocket* involves an additional party and takes place between the winds, voice, and piano, with melodic and rhythmic materials bouncing back and forth, sustaining the relay until the conclusion of the episode.

The concept of self-reference employed in the composition can be compared to the notion of recursion in grammar, as discussed by Chomsky and other linguists during the 1960s. Recursion, as commonly understood in computer programming, involves a procedure calling itself, resulting in a self-embedding process. In the field of language productivity, linguists have long debated whether our language system has the capability to form infinitely long sentences. The idea of recursion in grammar serves as evidence of the infinite generative capacity of language, as it allows for an iterative process without limit.⁶² Let us consider a sentence composed of a noun phrase and a verb phrase ($S \rightarrow NP + VP$). A noun phrase can be formed by combining an adjectival phrase with another noun phrase ($NP \rightarrow AdjP + NP'$), which can further introduce an embedded noun phrase involving an adjective and another noun phrase.⁶³ The recursive nature of these production rules enables endless language generation. Thus, even if our arsenal of words is finite and only a few sentence structures are involved, the resulting sentences can extend indefinitely.

The application of recursion to expand musical materials can be considered as proof of the productivity of music, akin to the concept discussed in language. Once again, this shows the principle of 'the infinite use of finite means', with a focus on the organizing procedures. While the African *hocket* alone may not be sufficient to illustrate humanity's capacity to manipulate musical elements, Berio takes it a step further by making the *hocket* self-referential, highlighting the potential for constructing hierarchies of infinite complexity based on this procedure.

However, the composer's pursuit of productivity in his music extends beyond 'grammar' alone. Berio also examined the phonetic and semantic dimensions, exploring the realm of sound and meaning, to make his work generative and rich in expressive possibilities.

Sound and meaning as generative impetus

While Berio challenges the arbitrary relationship between the signifier and the signified, particularly in questioning conventional interpretations of certain musical gestures, it is noteworthy that he also incorporates the semantic meaning of language in a playful manner. *Coro* deviates from employing a *cantus firmus* as a guiding thread for a continuous narrative. Instead, it embraces a process of continually generating new musical and textual materials from the existing materials of preceding moments through the intricate interplay of sound and meaning.⁶⁴ In addition to the evolving combinations of music and text, one can discern

62 Chomsky, *Aspects of the Theory of Syntax*, 137–51. See also Paul Post, *Cross-over Phenomena* (New York: Holt, Rinehart and Winston, 1971).

63 We can imagine a sentence of infinite length, constructed by incorporating as many adjectives as possible, or a sentence that involves an unending succession of relative clauses (e.g., 'I think that you see that I suspect that you believe that . . .').

64 Berio elucidates that the 'game of sound and meaning' in *Coro* is achieved through the interplay of text and music. In this composition, the same text is repeated with varying music, whereas different texts are set to the same musical framework. See Berio, 'Coro', in 'L'ora di là dal tempo, momenti di spiritualità nella musica contemporanea', *La*

The image displays a page of a musical score for Luciano Berio's *Coro*, Episode XI, measures 9-16. The score includes parts for Cori (1st and 2nd), Tr. (Trumpet), Tbn. (Trombone), T. b. (Tuba), S. (Soprano), A. (Alto), T. (Tenor), B. (Bass), and P. (Piano). Three annotations are present:

- A box at the top left contains the text "Rhythmic pattern borrowed from the chorus to the hocket". An arrow points from this box to the vocal parts (Soprano, Alto, Tenor, Bass) in measures 9-16.
- A box at the bottom center contains the text "New pitches borrowed from the hocket to the piano due to a change of rhythmic patterns". An arrow points from this box to the piano part in measures 9-16.
- A box at the bottom right contains the text "The melodic variations in piano resulting in a different set of pitches in the hocket". An arrow points from this box to the piano part in measures 9-16.

Example 12 *Coro*, Episode XI, bb. 9-16. © Copyright 1976 by Universal Edition S.p.A., Milano assigned to Universal Edition A.G., Vienna.

a diverse range of sonic and semantic relationships in the work, such as onomatopoeia, puns, commentary, associations, and imitations. These various methods employed by Berio to manipulate sound and meaning continuously yield new materials that propel the machinery of musical 'grammar'. It serves as Berio's innovative approach to crafting an invisible theatre of the mind, where the narrative evolves and unfolds organically.

Throughout the work, there is a pervasive presence of sonic and semantic play that introduces new elements. In Episode XXVII, for example, seemingly meaningless phonetic syllables are patterned and conjugated alongside the instrumental hocket, eventually forming a meaningful phrase: 'we were poor' ([wi] [wɜ] [pɔ]). The pun between 'poor' and 'pour' evokes imagery of showers, while also connecting to the hocket and the onomatopoeia of rainfall. The syllables then lead to a random combination of 'el di-a o-sci-la ro-de-a-do', a fragment of Neruda's poetry in Episode XXVIII. This text is set to an eight-part motet with repetitive figures reminiscent of *talea* and *colour*, conveying a meditative mood. The transition between episodes, as well as the general mood, is directed by the shift from phonetic play to the semantic meaning of the text.

Biennale di Venezia, Ricordi, 1995. Text manuscript housed in Paul Sacher Foundation. See also author's note at www.lucianoberio.org/coro-authors-note?1011856635%C2%BC1= (accessed 14 August 2024).

poco più mosso (♩ = 104)

Fl. F

C. ing.

Sax.

Tr. 1^a, 2^a, 3^a, 4^a

Perc. I 5 Tamb.

Org.

S 1-10

A 1-10

T 1-5

4-10

B 1-10

with *kratky* [d]

accel. . . rall. . . [♩ = 104]

suono aperto e paesano (Macedonia)

The flute's fluttering connecting to the sound of 'rain' and the rhythm in tam-tams

The Macedonian melody foreshadowing the Croatian dance and Yugoslavian style in later sections

Phonetic permutation on 'the rain is coming' in hockets as the onomatopoeia of rain

'rain' and 'stand up' connecting to water and rising motion (mentioned in previous episodes)

the rain is coming the rain is coming the rain is coming

stand up stand up stand up

stand up stand up stand up

stand up stand up stand up

stand up stand up the rain is coming the rain is coming stand up stand up

Example 13 *Coro*, Episode V, bb. 15-20. © Copyright 1976 by Universal Edition S.p.A., Milano assigned to Universal Edition A.G., Vienna.

These musical and textual elements also establish connections across episodes. In Episodes V–VI, a series of metonymies can be observed. In Episode V, as shown in [Example 13](#), the flute imitates the fluttering sound while mentioning the sky and the rain, leading to the hocket that disperses the syllables across the voices, mimicking the rain. Simultaneously, a Macedonian melody played by the flute and a new rhythmic pattern resembling the brushing of tam-tams are introduced. This pattern of rapidly repeated notes continues to expand in Episode VI, accompanying the recurring text by Neruda, ‘venid a ver la sangre’ (‘come to

see the blood'), which echoes throughout the work. Furthermore, a Croatian dance melody develops in Episode VI in response to the previously heard Macedonian melody. The lively mood swiftly transforms into an ominous atmosphere when the text mentions 'what a chill, what a wind' followed by 'the death comes'. The rapid repetition of syllabic singing on /de/ from 'death' reflects the characteristic style of traditional Croatian singing (the Istrian scale), while also serving as a sonic pun that recalls instrumental fluttering and patter singing from the preceding episode.

The interconnected events across multiple episodes are propelled by metonymic relations and the musical puns between the text and music. Once again, they form an invisible theatre in which musical and textual elements become 'characters'. The metonymic processes and the plays between sound and meaning become the plots in the narrative. The use of text in *Coro* belongs to the procedure of 'stage setting of word' ('messa in scena della parola') as described by Edoardo Sanguineti, who calls himself the text manager of Berio's work *A-Ronne* (1975).⁶⁵ In such treatment, the texts and sounds interact and become part of the scene, in contrast to a simple text-setting technique.⁶⁶ According to Sanguineti, the constant formation and re-formation of textual and musical elements constitute a double process of 'raising from sound to sense, and lowering from sense to sound' accomplished 'through a perpetual game of analysis and synthesis, composition and decomposition', and 'structuring and de-structuring of the word'.⁶⁷ The oscillation between meaningful and meaningless sound materials ultimately becomes the driving force behind the episodes, propelling the narrative forward.

Coro can be seen as another project which combines automation and randomness. As in *Sinfonia*, *Coro* illustrates a system that becomes self-generating towards the end. Different combinations of the musical and textual elements generate different images and situations as the narrative continues. While there is still no clear evidence of an innate musical ability to justify the hypothetical notion of a universal musical grammar in *Coro*, the experiment reinforces Berio's expansive system that incorporates diverse musical experiences, which he refers to as 'language of languages':

I do not believe that Adam, in that famous garden, ever received the divine gift of a universal musical grammar, eventually doomed to destruction in the Tower of Babel . . . Now and then music sends out hesitant cues as to the existence of innate organism which, if fittingly translated and interpreted, may help us pinpoint the embryos of a universal musical grammar. I do not think that such a discovery can be useful to musical creativity, nor to the utopian prospect of a perfect, common

65 Edoardo Sanguineti, 'La messa in scena della parola', in *Ideologia e linguaggio*, ed. Ermino Risso (Milan: Feltrinelli Editore, 1965), 172–7.

66 Claudia di Luzio also observes that Berio's 'messa in scena' alludes to the Catholic Mass (messa) and the theatrical term for stage production (*mise en scène*). Claudia di Luzio, 'L'opera è aperta: Luciano Berio's Experimental Music Theatre from His American Years', in *Crosscurrents: American and European Music in Interaction, 1900–2000*, ed. Felix Meyer (Basel: Boydell Press, 2014), 454.

67 Sanguineti, 'La messa in scena della parola', 173.

musical language that will enable musicians to speak and be unanimously spoken. But I do think that it could contribute to exploring musical experience as a 'language of languages', establishing a constructive interchange between diverse cultures and a peaceful defense of those diversities.⁶⁸

Stefano Oliva suggests that Berio's 'language of languages' concept may align with Saussure's notion of *langage*, which relates to the universal 'language faculty' ('*faculté du langage*') found in humans.⁶⁹ Nevertheless, it is more plausible to view it as a tangent to the abandoned pursuit of uncovering a utopian vision of the 'universal musical faculty' in humans. It refers to a musical work that encompasses a multitude of conventions, each with its own distinct systems and historical context.

The theatre of the mind

Both *Sinfonia* and *Coro* have been composed in a manner that emulates a self-generating system. In both works, a narrator, represented by the subject 'I', offers reflective commentary on the composition. The 'I' in *Sinfonia* determines the inclusion of elements in the Scherzo, while in *Coro*, the 'I' continually recreates a flawed song, expressing the difficulty of song-making and the persistent desire to perfect it. The expressive structure and behaviours of the musical characters in both pieces respond to the insatiable 'I', resulting in recursive verbal and musical exchanges that become increasingly automated. This practice is connected to the phenomenon of the 'reduction of "I"' ('*riduzione dell'io*') during the *neoavanguardia* movement. The subject serves as a cognitive agency, establishing a connection to the world. The focus is on grappling with one's expressive structure rather than the ineffable essence of the subject itself.⁷⁰ Berio's 'desiring machine of the composer' continually repeats itself, modifying old materials to create new ones, resembling a self-contained system with automatic feedback.⁷¹

This music and text generator continuously creates new materials to evoke vivid images in the minds of the audience, stimulating their imagination. While Berio attempted to establish connections between musical and textual materials in a less arbitrary manner by considering the nature of language and restructuring the organization of these materials, he could not entirely escape the semantic meaning of the texts – the arbitrary relationship between the signifier and the signified that he aimed to transcend. The music and text in Berio's works are deliberately evocative and fragmented, creating an invisible theatre that allows the audience to interpret and imagine for themselves. In the later work *A-Ronne* (1975), Berio applied the

68 See Berio, 'Translating Music', in *Remembering the Future*, 60.

69 While Stefan Oliva's discussion on Berio's musical concept and language faculty is inspiring, his discussion primarily focuses on philosophical aspects and lacks specific musical examples. Stefano Oliva, 'Luciano Berio and the Problem of Musical Language', *Rivista italiana di filosofia del linguaggio*, 14/1 (2020).

70 See Sanguineti's discussion on the use of 'I' as cognitive agency of a narrated character. Edoardo Sanguineti, 'Il Trattamento del materiale verbale nei testi della nuova avanguardia', in *Ideologia e linguaggio*, 77–107.

71 Quaglia takes an extensive step by drawing a comparison between Berio's system of self-analysis and Deleuze's notion of the 'machinic assemblage of desire' in *A Thousand Plateaus*. According to Quaglia, it is desire itself that keeps propelling the creation of the composition machine. Quaglia, 'Transformation and Becoming Other', 231–32.

concept of the 'theatre of the mind', encouraging the audience to engage their imagination and create a mental drama.⁷² This idea of the theatre of the mind was indeed anticipated in *Sinfonia* and *Coro*, as I suggest. Audience members are invited to derive meaning from the evoked images and situations, participating in a compositional process akin to the narrator-as-composer (the subject 'I') in *Sinfonia* and *Coro*, who generates ideas. The technique of evoking mental images in the audience's mind likely originated from Berio's earlier electroacoustic works such as *Thema (Omaggio a Joyce)* (1958) and *Visage* (1961). Richard Causton further connects the suggested imagery in these tape works to the concept of the 'theatre of the mind', as electroacoustic music unavoidably triggers mental images rooted in other aspects of life.⁷³ Likewise, the use of quotations in Berio's compositions serves as reminders to the audience of their own listening experience. In these musical works, the agency of creativity shifts from the composer to the listener through the process of seeking meaning.

Returning to Berio's exploration of the 'eternal path between sound and sense', did he ultimately succeed? When examining his orchestral works during this period, Berio did not demonstrate isomorphic relationships between music and language, such as directly equating pitch organization with syntax. However, he did reveal certain similarities between the nature of language and that of music. He illustrated that musical units can be filtered into abstract features and that the combination of different features can create new units that can be recognized as signs. Although he did not provide scientific proof regarding the classification of music as language, he proposed the possibility that music itself can be as productive as language by embracing the notion of 'the infinite use of finite means' in his compositions. This opens the door to investigating whether humans possess an innate ability to process and create music.

While Berio aimed to challenge the arbitrary relationship between the signifier and the signified, as explored by Ferdinand de Saussure, his works involved the semantic meaning of texts, which inherently rely on arbitrary relations. However, on another level, the presence of quotations, sound and text fragments as characters, imagery, and other scenic elements evokes powerful responses, inviting audience members to visualize a series of scenes in their minds. This mental stage intertwines expressivity and imagery, allowing the audience to interpret meaning based on their life experiences, moods, and knowledge. In this sense, the arbitrary connections between sound and sense are genuinely challenged. It is the audience members themselves who attribute direct meaning to the sound, while imagery and emotions blend within this theatre of the mind. All the aforementioned linguistic thoughts,

72 See author's note of *A-Ronne*: www.lucianoberio.org/a-ronne-authors-note?1747386730=1 (accessed 25 March 2024).

In subsequent analyses, Richard Causton and David Osmond-Smith have embraced the concept of 'theatre of the mind' to characterize Berio's other compositions, such as *Visage*, *Passaggio*, and *Laborintus II*. These works engage the audience's imagination, prompting them to construct a vivid drama in their own mind. See Richard Causton, 'Berio's "Visage" and the Theatre of Electroacoustic Music', *Tempo*, 194/Oct (1995); David Osmond-Smith, 'Voicing the Labyrinth: The Collaborations of Edoardo Sanguineti and Luciano Berio', *Twentieth-Century Music*, 9/1-2 (2012).

73 Causton, 'Berio's "Visage" and Theatre of Electronic Music', 17.

I conclude, were Berio's solution for the convergence of music and language in the 1960s and the 1970s.

Berio's quest for a 'utopia' where music and language converge has led him to re-imagine the symphony and chorus genres, introducing innovative ideas that blend different elements together. In his exploration of the connection between music and language, Berio investigated the depths of the human unconscious, seeking potential similarities in how our minds process music and language. While the definitive conclusions may have eluded him, Berio's 'linguistic' projects propelled him to develop his own unique compositional approach. He incorporated insights from linguistics and literature into his works, particularly drawing inspiration from the concepts of structural (and later post-structural) linguistics, which had a profound impact on the humanities throughout the twentieth century. These investigations reveal the possibility of exploring music in relation to other disciplines, offering a new perspective on the interconnectedness of communication.

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