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The music of The Netherlands is largely absent from Western repertories and scholarly pursuits. A glance at the contents of academic libraries, score anthologies, and concert offerings suggests that this music has been largely neglected by performers, pedagogues, and audiences. A common sentiment in many music historical works is that The Netherlands suffered a long period of musical stagnation between the time of Jan Pieterszoon Sweelinck (1562-1621) and the career of Willem Pijper (1894-1947). Part of this perceived stagnation can be linked to the dominance of German art and aesthetics over the Dutch musical establishment for centuries after the death of Sweelinck. With the appearance of modernist musical trends around the turn of the twentieth century and the advent of World War I, Dutch composers began to look beyond Germany to create and establish a nationalist Dutch music. This movement, spearheaded by Pijper and his students, helped move Dutch music out of the shadow of German tradition.

A member of this new Dutch School was composer and theorist Rudolf Escher (1912-1980) whose works synthesize twentieth century compositional trends with Dutch aesthetics. Dutch musical values such as formal craftsmanship, objective expression, and polyphony can be found alongside the liberated harmonic materials of the French School in his music. Under Pijper's tutelage, Escher was encouraged to find his own voice as a composer and to break free from entrenched traditions. The first part of this dissertation examines Escher's influences and compositional ethos within the historical context of his life. The second part of this study examines Escher's harmonic language in his World War II era suite for piano titled Arcana (1944-45). The analytical discussion in this study shows that Escher uses an eclectic palette of harmonic materials that incorporates octatonic scales with traditional diatonic and modal pitch

collections. Polytonal juxtapositions derived from Pijper's "germ cell" technique and their influence upon the form of the work are also discussed. The final discussion in this dissertation addresses the influence of Escher's ethos and harmonic language on creating an informed performance of this music so that others are inspired to explore this neglected repertoire.

GOOD LISTENING: DISCOVERING AND UNDERSTANDING RUDOLF ESCHER'S HARMONIC LANGUAGE IN HIS ARCANA SUITE FOR PIANO

by

Corey Greyson Clifton

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Approved by

Dr. Andrew Willis
Committee Chair

DEDICATION

This work is dedicated to the memory of Rudolf Escher, whose unique musical language and ethos have profoundly transformed my life. The world is richer and more beautiful now, and for that reason I am eternally grateful for his contribution to musical art.

Finally, to all those great artists whose creative work has yet to be discovered and appreciated: don’t ever stop. Those of us who still seek beauty will find you. You will not be forgotten.

APPROVAL PAGE

This dissertation written by Corey Greyson Clifton has been approved by the following committee of the Faculty of The Graduate School at The University of North Carolina at Greensboro.

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Listening Well

The music of The Netherlands is largely absent from Western repertories and scholarly pursuits. A glance at the contents of academic libraries, score anthologies, and concert offerings suggests that this music has been largely neglected by performers, pedagogues, and audiences. A common sentiment in many music historical works is that The Netherlands suffered a long period of musical stagnation between the time of Jan Pieterszoon Sweelinck (1562-1621) and the career of Willem Pijper (1894-1947). Part of this perceived stagnation can be linked to the dominance of German art and aesthetics over the Dutch musical establishment for centuries after the death of Sweelinck. With the appearance of modernist musical trends around the turn of the twentieth century and the advent of World War I, Dutch composers began to look beyond Germany to create and establish a nationalist Dutch music. This movement, spearheaded by Pijper and his students, helped move Dutch music out of the shadow of German tradition. Inspired by French artistic ideals and composers like Claude Debussy (1862-1918), Pijper consistently pushed his students and the Dutch musical establishment to create works that embraced modernity to create a new and unique music of which The Netherlands could be proud.

A member of this new Dutch School was composer and theorist Rudolf Escher (1912-1980) whose works synthesize twentieth century compositional trends with Dutch aesthetics. Dutch musical values such as formal craftmanship, objective expression, and polyphony can be found alongside the liberated harmonic materials of the French School in his music. Under Pijper's tutelage, Escher was encouraged to find his own voice as a composer and to break free from entrenched traditions. Escher's *Arcana* suite for piano (1944-45), exhibits his unique musical voice. Set in four movements that harken back to familiar forms, Escher uses an eclectic

palette of harmonic materials that incorporates octatonic scales with traditional diatonic and modal pitch collections. My research examines Escher's harmonic language in *Arcana* to expose readers to the work of the composer, and to inspire others to investigate this rich and neglected repertoire. As musical enthusiasts, our primary task is to listen deeply first and foremost. Any theoretical reading of this music must begin there. The composer has articulated his ideas clearly. All we need to do is listen well.

Review of Literary Sources

The score for *Arcana* is published through Donamus, a Dutch music publisher that is dedicated to the preservation and dissemination of music from the Netherlands.[1] This edition represents Escher's final thoughts on the piece as revised in 1979-1980.[2] The manuscript contains the text "Suite en fin de la Guerra/ Suite en 1944/ pour Piano (Following the end of the War/ Continued in 1944/ for piano)," but this was crossed out by Escher.[3] The original title, *Arcana musae dona* (The Mysterious Gifts of the Muse), was ultimately changed to *Arcana* during Escher's revision process.[4] As of this writing, the only commercially available recording of *Arcana* is by Sepp Grotenhuis, which can be purchased on Amazon.com as an mp3 download. Another recording by Ronald Brautigam can be found on Youtube.com, but listeners should note that the score attached to the video is an older edition that does not represent all of Escher's revisions as published by Donamus.

To understand Rudolf Escher's music and Dutch musical culture in the early twentieth century, this study prioritizes sources that were written by musical artists from The Netherlands

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[1] Rudolf Escher, *Arcana* (1944). Amsterdam: Donemus, 1994
[2] Beatrijs Escher, "Rudolf Escher 'The Oeuvre.'", 55
[3] Ibid.
[4] Ibid.

or those who lived and worked there. Since very few English sources mention Escher in any detail, one must turn to articles and books in Dutch to create a detailed picture of the composer's life and historical context. The first category of references for this study contains articles that explore Dutch musical culture and its changes throughout the twentieth century. The earliest of these is "The Musical Mentality of Holland" by musicologist, composer, and critic Herbert Antcliffe. Though Antcliffe was English, he spent much of his career working as a critic in The Netherlands and served as President of the Foreign Press Association there prior to World War II.[5] Published in *The Musical Quarterly* in 1926, this article gives contemporary insight into the Dutch cultural climate of the 1920's. Antcliffe investigates the musical mindset of both professional musicians and non-musicians within the context of the many changes that were influencing Dutch musical culture at the time. This is primarily a historical work and does not discuss specific composers or contemporary Dutch composition at any length.

Published in *The Musical Quarterly* in 1955 by Alexander L Ringer, "Willem Pijper and the 'Netherlands School' of the 20th Century" is a concise essay that explores Dutch music both before and after the influence of Willem Pijper. Ringer summarizes Pijper's life and discusses the composer's compositional traits. There is little mention of Escher outside of his role as one of Pijper's promising students. Ringer was not Dutch, but was born in Berlin and studied in Amsterdam, The Netherlands.

Dutch musicologist Jos Wouters' 1965 article "Dutch Music in the 20th Century", also published in *The Musical Quarterly*, discusses Dutch musical culture and history twenty years after World War II. Wouters discusses the changing Dutch musical environment with deference

[5] Herbert Antcliffe, "Herbert Antcliffe Manuscripts, c.1899-1961." See description of archive.

to Pijper and his students. Escher is mentioned only briefly in this regard, but the discussion of his music is limited to a brief mention of extended tonality in his works.

Included within this category of Dutch music culture resources is a 2010 interview called "Getting into Dutch… Music, That Is: A Conversation with Cellist Doris Hochscheid and Pianist Frans van Ruth" conducted by Jerry Dubins for *Fanfare* magazine. The interviewees discuss the past and present of Dutch music through a performer's perspective. Escher's *Cello Sonata* is discussed along with a desire to hear and play more native-Dutch compositions.

The second category of references for this study includes works that mention Escher extensively. The most important of these sources is "Rudolf Escher 'The Oeuvre'," prepared by the composer's wife Beatrijs Escher for the Royal Society for Dutch Music in 1998. This book is a *catalogue raisonné* that includes dates and revision history for each work, as well as Rudolf's own words regarding each work when available. A detailed biography is included but there is no discussion of the composer's compositional traits. It is available in Dutch only.

Dutch composer, theorist, and musicologist Leo Samama was also an important resource for this study. Samama, a living student of Escher, quotes him frequently in his written works. *The Meaning of Music* is a historical and philosophical work that explains the phenomenon of music through the author's lens. Many of his discussions include what Escher had to say about each chapter's topic. This book has been translated into English and is available through Amsterdam University Press.

Samama's *Nederlandse Muziek in de 20-ste Eeuw* (Dutch Music in the 20th Century) is a historical and theoretical book that offers an overview of the Dutch composers that came to prominence during the twentieth century. Each composer is given a biography and a discussion of their music. The book also includes commentary and criticism that echoes the cultural

observations of Antcliffe, Ringer, and Wouters. This source is valuable for its historical context, and insight into Escher's musical and philosophical beliefs. This book is available in Dutch only, through Amsterdam University Press.

The final category of sources for this study includes twentieth century theoretical articles and books. Among these, Dutch theorist Hans Eduard Kooij's article "Composition by Use of Germ Cells: A Botanical-Musical Analogy in the Willem Pijper *Sonata for Piano*" was very insightful. This article succinctly explains Pijper's "germ cell" process and how to discover the origins of the composer's germ cells through octatonic juxtapositions and spacings. Kooij also describes his theory of botanical analogy and how it materializes in Pijper's music as branches that grow from an original germ cell.

Finally, the book *Music of the Twentieth Century* by Dutch composer and theorist Ton De Leeuw offers a refreshing perspective on major musical developments during the twentieth century. This book begins with a concise musical history that includes major musical and philosophical movements. There is no mention of Escher, but each composer and work are given their due. There are many examples that clearly connect with the discussion, and De Leeuw's language and manner is always pleasant and avoids condescension. This book is highly recommended for those wishing to synthesize twentieth century musical traits, and to understand them in their appropriate historical context. It has been translated into English and is available through Amsterdam University Press.

Dutch Musical Culture in the Early Twentieth Century

The musical culture of The Netherlands was in great flux at the turn of the twentieth century. On one hand were conservative musicians whose work advanced and maintained German sensibilities within their own music. On the other were pioneering composers who

envisioned a future with an independent Dutch School of composition. The problem was much more nuanced than this binary description would suggest. There was also a religious dimension to the question of why the Dutch seemingly fell off the musical map of Europe after the death of Jan Pieterszoon Sweelinck. Musicologist Alexander L. Ringer explores this issue thoroughly in his article "Willem Pijper and the 'Netherlands School' of the 20th Century."[6] Ringer suggests that the Dutch Calvinists instituted restrictive rules regarding artistic matters and secular entertainment. This tight control lasted into the latter half of the nineteenth century, "when the Reformed Church's traditional grip on secular life in Holland had begun to slacken and the country generally, under the dynamic pressure of women's rights and workers movements, slowly moved towards a more liberal cultural outlook."[7]

At the end of the nineteenth century, much of Dutch artistic life was heavily influenced and reliant upon German trends and fashions. One aspect of this condition can be explained by the fact that The Netherlands was often overshadowed by its influential neighbors Germany and Belgium.[8] Dutch relations with the region now known as Belgium were hampered by religious conflicts in the Low Countries and France, while political relations between The Netherlands and Belgium were not clearly established until 1839.[9] Naturally this meant the Dutch turned elsewhere for political and artistic allies. Many of the Dutch people shared racial and ancestral ties with the Germans and Austrians whose connections they traced back to the migration of Teutonic people.[10] Additionally, Ringer suggests that a great fascination with all things foreign

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[6] Alexander L. Ringer, "Willem Pijper and the "'Netherlands School'" of the 20th Century"

[7] Ringer, 427

[8] Herbert Antcliffe, "The Musical Mentality of Holland," 603

[9] Ringer, 430. Belgium declared independence from The Netherlands in 1830 but was not recognized until 1839.

[10] Antcliffe, 603

in music began to take hold over the Dutch people after the death of Sweelinck.[11] Ringer offers the example of seventeenth century Dutch composer Quirinus van Blankenburg, who transposed his name to the Italian "Di Castelbianco" in order to find success with the Dutch public.[12] The Viennese Classical school of the eighteenth century also held great sway over Dutch musicians, and influenced a German-oriented trend that continued through the Romantic period.[13]

A systematic reliance upon German art and institutions quickly followed. Many of the Netherland's most promising musicians were sent to German states to train, while in the 1880's the design of the Concertgebouw, a major concert hall in Amsterdam, was modeled after that of the Leipzig Gewandhaus.[14] Musicologist Herbert Antcliffe says that this reliance on German training meant that Dutch musicians did not know that good music could come from outside of the German tradition.[15] Regarding the Dutch people Antcliffe says, "because he knows that the works of Beethoven and Brahms are good, well constructed, inspired, expressing fine thoughts in a fine way, he feels that works which do not conform to these standards lack some of their greatness, while if they have any significance of a different character he is so far out of sympathy with such character that he cannot see the significance of the individual work."[16]

For all these reasons, The Netherlands was sympathetic towards the art that came out of the German states. As a result, Dutch composers at the turn of the twentieth century looked to composers like Gustav Mahler and Richard Strauss for their models; their more-adventurous contemporaries Arnold Schoenberg and Igor Stravinsky were sidelined and mostly remained

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[11] Ringer, 427
[12] Ibid., 429
[13] Ibid., 430
[14] Jerry Dubins, "Getting into Dutch… Music that is.", 107
[15] Herbert Antcliffe, "The Musical Mentality of Holland.", 605
[16] Ibid., 606

unheard.[17] Even though Schoenberg was German, the conservative Dutch musical establishment had no tolerance for his kind of atonality until about a decade after World War II.[18] This narrowly German perspective had a chilling effect on native Dutch composition, and as Dutch pianist Frans van Ruth puts it, "there can be no natural fertility when a model is transposed from one country to another" because the model did not arise organically from Dutch culture.[19]

Regarding Dutch conservative views on music in the 1920's, Herbert Antcliffe observes that the Dutch people "lose as much as they gain by their conservative ideas as to what music is good and by their exclusive artistic and social caste system, but [they] will make no move to prevent that loss."[20] Antcliffe's argument is not that the Dutch people lacked the intellect for new music, but rather that they were a practical people who preferred to avoid conflict even if it meant foregoing new heights of musical possibility.[21] Dutch theorist and composer Leo Samama suggests that this level of apathy regarding native Dutch composition still exists to this day. In the preface to his book *Dutch Music in the 20th Century: Prelude to a New Day*, the author says the following:

> This book aims to offer many people the opportunity to get acquainted with a particularly fascinating part of Dutch culture; a part that has so far been tolerated rather than actually stimulated, a part that apparently inspires so little confidence that Dutch musicology has preferably not concerned itself with it, or only in the kind of writings that most musicologists can work with so well: writings that only serve to maintain their own profession and not to disseminate in research that by virtue of which the profession exists, namely the music.[22]

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[17] Leo Samama, "Dutch Music in the 20th Century: Prelude to a New Day," 26

[18] Ibid., 206

[19] Dubins, 107

[20] Antcliffe, 613. Antcliffe explores the attitudes of the Dutch people toward music around 1926 when the article was published. This article explores the societal gulf between instinctive feeling and conscious mentality, a false gulf as the author suggests, that polarized the expert from the novice during the 1920s.

[21] Ibid., 604-605

[22] Samama, Dutch 20th Century Music, 8

Prior to 1920, performances of classical music in The Netherlands primarily took place in Amsterdam.[23] Native Dutch offerings at these performances were limited and artists did not feel there was enough effort to publicize their work. The music that was performed was most often German or written in the late-Romantic German idiom.[24] Matthijs Vermeulen (1888-1967), one of the earliest of the Dutch progressive composers, held such contempt for the conservative establishment that he compared them to mere puppets whose strings were pulled by the Germans. He said, "Dutch composers, you are worth nothing more than lyre men, you are puppets of a janklassenkast cupboard, old trumpets, worn timpani skins."[25]

All of these factors inhibited the growth of a native Dutch musical language, but Alexander Ringer links this problem to changes in musical style in general.[26] As the dominance of polyphony waned during the first decades of the seventeenth century, Dutch composers found little of interest within the emerging homophonic style.[27] Ringer states that the new genre of opera left little impression in The Netherlands whose political and state leaders were "quite untheatrical and down-to-earth."[28] It therefore seems quite natural that Dutch potential remained latent until the eventual revival of contrapuntal interest in the twentieth century.[29]

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[23] Samama, Dutch 20th Century Music, 27
[24] Ibid.
[25] Ibid. A janklassenkast cupboard is a portable marionette box that opens into a puppet show stage.
[26] Ringer, 429
[27] Ibid., 429
[28] Ibid.
[29] Ibid.

Willem Pijper and a Demand for Change

A new movement in Dutch music emerged around 1880. The artists in this movement sought to create a novel Dutch music, thereby awakening the talent of artists within The Netherlands.[30] Dutch musicians of the late-Romantic generation began to look to non-Germanic models for new technical and expressive materials. Some artists within The Netherlands had already turned to developments in France, and the onset of World War I accelerated this trend.[31] World War I caused a great change in the hearts and minds of Dutch artists, many of whom were suddenly forced to reassess their traditional influences and political ties despite the policy of neutrality adopted by their country.[32] The Renaissance polyphonic masters who represented the great Dutch composers of the past worked in the Low Country north of France. It was a return to the music of that area and its proximity to France that inspired younger Dutch composers to assimilate the techniques of Debussy.[33] Leo Samama suggests that Dutch composers were drawn to Debussy because of his ability to convey the most complex and nuanced of emotions outside of any formulaic convention or tradition.[34] He says, "Debussy had created the possibility to treat harmonies as independent entities, to free rhythm and meter from every straightjacket, and to shape the melos as freely as the inspiration dictates."[35]

Following the end of World War I, The Netherlands began to develop its own national repertoire due primarily to the efforts and personality of Willem Pijper.[36] In current research,

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[30] Jos Wouters, "Dutch Music in the 20th Century.", 97
[31] Samama, Dutch 20th Century Music, 8
[32] Ringer, 432
[33] Ringer, 432
[34] Samama, Dutch 20th Century Music, 40
[35] Ibid.
[36] Wouters, 97

Pijper is almost unanimously held to be the primary driver of musical change in The Netherlands in the years between World Wars I and II. Pijper's resolute commitment to the creation of a Dutch national school helped promote Dutch music at home and abroad.[37] Alexander L. Ringer states that Pijper "insisted with an almost fanatical perseverance that the Dutch could produce good music like any other nation if only they explored their own possibilities. To the Germans, he [Pijper] once said, music may be a religion; the Dutch will always consider it a game, but a serious one."[38]

Willem Frederik Johannes Pijper was born in 1894 into a working-class family with strict Calvinist beliefs. Due to his poor health as a child, young Willem was homeschooled until the age of 14.[39] At age 5, his father introduced him to the white keys of the keyboard and he quickly grasped the sharps and flats while discovering the tonal key system.[40] Soon after, he toyed with symmetrical scales built on alternating whole and half steps. This discovery was the starting point of a life-long fascination with octatonic scales that would later prove paramount to the construction of his music.[41] During his homeschool years, Pijper became a voracious reader and developed an intense interest in botany. His obsession with cellular growth and reproduction lead to his compositional premise of the "germ cell" later in life.[42]

By age 14, Pijper's health had improved, and he was sent to study organ at the *Gymnasium* in Utrecht.[43] He left to study at the *Utrecht Toonkunst Muziekschool* in 1911 where

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[37] Wouters, 97

[38] Ringer, 443

[39] Harrison Ryker, "Willem Frederik Johannes Pijper" from *Grove Music Online*

[40] Hans Eduard Kooij, "Composition by Use of Germ Cells: A Botanical-Musical Analogy in the Willem Pijper Sonata for Piano", 119

[41] Kooij, 119

[42] Ibid., 120

[43] Ryker

he studied composition with the conservative Johan Wagenaar and piano with Helena van Lunteren-Hansen.[44] Pijper graduated in 1915 and began to pursue composition seriously, producing works that showed the influence of Mahler. Pijper's musical language began to shift toward French styles of expression around 1918.[45] The premiere of his *First Symphony* under Willem Mengelberg's direction with the Concertgebouw Orchestra in April of that same year brought him his first international success.[46] From 1918 to 1921, he taught theory at the *Amsterdam Muziek Lyceum* and began writing musical essays and criticism for the critical journal *Utrechtsch Dagblad*. This period is notable for Pijper's strongly worded criticism of Dutch compositional "complacency and amateurishness" as he fought to awaken The Netherlands' musical voice.[47]

Pijper adopted an entirely new compositional language around 1920 and became the apparent leader of the Dutch avant-garde. He also founded the Dutch chapter of the International Society for Contemporary Music (ISCM) along with fellow progressive composer Sem Dresden.[48] In 1925 he was appointed chair of composition and orchestration at the Amsterdam Conservatory by Dresden. Concurrently, assistant conductor of the Concertgebouw Charles Monteux championed his works at home and abroad.[49] His works were also heard through concert tours sponsored by ISCM contacts, and Oxford University Press began publishing his piano and chamber works.[50]

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[44] Ryker
[45] Ibid.
[46] Ibid.
[47] Ryker
[48] Ibid. See also Ringer, 433 and 434
[49] Ibid.
[50] Ibid.

In 1926, Pijper's sharp criticism of the conservative Dutch musical establishment was given greater voice when he became co-editor of the critical and progressive journal of music *De Muziek*. He became head of the Rotterdam Conservatory in 1930 and remained there until his death in 1947. Along with some of his former students and the local conductor Flipse, Pijper turned Rotterdam into a hub for contemporary music.[51]

Leaving his strict Calvinist upbringing behind, Pijper joined a Masonic lodge in 1938 and developed an interest in astrology, symbolism, and gematris.[52] His Freemason associations led to numerological formations in his music, and his style became more tonally contrapuntal. These influences led him to a simpler, less dissonant type of musical language as he searched for a new way to express beauty and form.[53] As Alexander L. Ringer puts it, Pijper's musical "crystallization of restlessness" of the 1920's was displaced in the 1930's, as "the composer had at last made peace with himself and the world at large."[54] This hard-won peace was to be temporary, as the tides of World War II swept through The Netherlands in 1940.

In May of 1940, the Germans bombed Rotterdam and Pijper's home was destroyed.[55] Fortunately, copies of most of his scores were preserved elsewhere. Pijper maintained the Rotterdam Conservatory throughout the war years and later served on committees to rebuild the artistic institutions of The Netherlands after the war ended in 1945. His compositional spirit was

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[51] Ryker

[52] Ibid. Gematris is a type of musical numerology that is associated with the polyphonists of the old Netherlands Renaissance school and J.S. Bach.

[53] Ringer, 441

[54] Ibid. The "crystallization of restlessness" quote refers to a comment that Pijper made about Bela Bartók's music. Ringer uses Pijper's own words to describe Pijper's music of the 1920's.

[55] Kooij, 120

broken by the war years however, and he produced no music of note after 1940.[56] Willem Pijper died on March 18, 1947, after being diagnosed with cancer the previous November.

As both composer and teacher, Pijper advocated for a new Dutch music. Following their teacher's insistence on the creation of a more modernist and pluralistic music, Pijper's students became the most prominent composers in Dutch musical society through the 1960's. Rather than forcing a certain viewpoint upon his students, Pijper encouraged them to find their own unique musical language.[57] In the words of Alexander Ringer, "far from wasting his energy on any futile attempts to resurrect in the 20th century the exact compositional procedures of a remote past, he succeeded in restoring its spirit, which he felt was the spirit of any genuinely 'Netherlandish' music."[58]

The Life of Rudolf Escher

The life of Rudolf George Escher began on January 8th, 1912, in Amsterdam, The Netherlands, where he was born to Berend George Escher and Emma Brosy Escher. The Escher family lived in the Dutch East Indies from 1916 to1921 where his father worked as a geologist for the Bataafsche Petroleum Company in Weltevreden, Batavia (now known as Jakarta, Indonesia).[59] Rudolf's musical education began with lessons from his father while the family resided in the Dutch colony. The family relocated to Leiden in The Netherlands in 1922, where he began formal piano lessons with Bé Hartz.

The family moved to Oegstgeest in 1928, and Rudolf began painting lessons and started working on his first original compositions. He decided to become a composer in the following

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[56] Ryker, Grove Music Online. Pijper's final *String Quartet No. 5* of 1946 was left unfinished.
[57] Ringer, 443
[58] Ibid., 436
[59] Beatrijs Escher, "Rudolf Escher 'The Oeuvre.'", 13

year and began harmony and violin lessons. Rudolf attended the Toonkunst Conservatory in Rotterdam from 1931 to 1937 as a piano principal and cello minor. There he began studying composition with Willem Pijper in 1934.[60] That same year, Escher met musicologist Eduard Reeser (1908-2002) who would be instrumental in the preservation of his musical output. Rudolf also became interested in poetry during this period, debuting as poet in the *Nieuwe Rotterdamsche Courant* in 1935.[61]

By 1937, Escher was a committed composer, invigorated by his studies in Rotterdam under the tutelage of Pijper. He married Beatrijs Jongert on September 29th, 1937, and they lived in Paris, France for three months that same year. In Paris, the Eschers attended the *World Exhibition of Art and Technology* where they saw all the concerts and exhibits.[62] The Eschers moved back to The Netherlands on January 10th, 1938, where they lived in Leuvehaven.

1940 was a decisive and dangerous year for the Eschers as the horrors of World War II exploded into their lives. In the early morning of May 10, the couple saw planes landing on the Maas river and conflicts in the air over the harbor of Waalhaven in Rotterdam. The Eschers fled to Kralingen where they stayed with the Jongerts, Beatrijs' parents. On May 14, Rotterdam was bombarded by the Germans. A bomb fell 20 meters from their home, destroying Rudolf's score manuscripts and written works. The Eschers escaped to Reeuwijk and joined the Jongert's at their summer home.[63] The years that followed were extremely dangerous for the Eschers and their friends.

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[60] Beatrijs Escher, "Rudolf Escher 'The Oeuvre.'", 14
[61] Ibid.
[62] Ibid.
[63] Ibid.

In 1941, while Rudolf worked as an illegal courier, his sister Charlotte and her husband Jan Schouten covertly joined the resistance against the Germans. These actions were considered taboo in The Netherlands. Though The Netherlands attempted to stay neutral during the war, they were conquered in May of 1940, and many of its citizens hid their hatred of the Nazis to survive. While in Reeuwijk, Rudolf composed his first major work for orchestra, *Musique pour l'esprit en deuil* (Music for the Spirit in Mourning) to give voice to his thoughts about the war.[64] The Germans introduced the Nederlandse Kultuurkamer in 1942 as the Dutch extension of the Reich's Kultuurkammer propaganda arm against non-Aryan art. Composers were expected to register for the Nazis' music guild with an Aryan declaration and a completed genealogical questionnaire.[65]

This was in essence a compulsory requirement if musicians wanted to continue to work and benefit from membership within the Kultuurkamer.[66] Every composer in the Society of Dutch Composers was automatically registered with the Kultuurkamer since the two guilds were combined into one.[67] Though the guild tried in vain to retain the membership of many prominent musicians, Rudolph Escher and others refused to register with the Kultuurkamer.[68] In January of 1942, Escher left the Society of Dutch Composers and distanced himself from the German Kultuurkamer.[69] Those who refused to join saw their works banned from performance.[70] Things

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[64] Beatrijs Escher, "Rudolf Escher 'The Oeuvre.'", 15

[65] Leo Samama, 'Dutch Music in the 20th Century: Prelude to a New Day', 186

[66] Samama, 'Dutch Music in the 20th Century: Prelude to a New Day', 186

[67] Ibid. The author provides lists of names that were kept that describe which composers were full members, those who were partial members (supplying an Aryan declaration but not a genealogical survey), and those composers who instead registered as performers.

[68] Ibid., 186

[69] Beatrijs Escher, 15

[70] Samama, 'Dutch Music in the 20th Century: Prelude to a New Day', 186

did not go as the Germans planned however, and many more composers' works were performed than just those who had fully joined the guild.[71]

The Eschers moved to Rudolf's parental home in Oegstgeest in the fall of 1942 where they sheltered Jan van Gilse, a fellow composer and outlaw who founded the illegal music periodical *De Vrije Kunstenaar.*[72] The home in Oegstgeest was used until the end of the war as a refuge for artists and other people in hiding.[73]

1944 marked the beginning of the end of the war, and 1945 was a happier year for the Eschers. The Eschers welcomed the birth of their son Gielijn on April 22nd, 1945, and The Netherlands was liberated on May 5th.[74] After the war, Rudolf found work in Amsterdam as a music and visual arts writer for the magazine *De Groone Amsterdammer* from May 8, 1945, to October 7, 1946.[75] Rudolf was awarded the *Amsterdam Music Prize* for his work *Musique pour l'esprit en deuil* on January 5th, 1946, bringing a close to this tumultuous chapter in Escher's life.[76]

After the war, Escher served on several boards intended to reinvigorate Dutch musical life. From 1946 to 1951, he served as secretary on the administrative board of *De Nederlansche Opera* in Amsterdam and began a friendship with fellow composer Matthijs Vermeulen, who succeeded him at *De Groene Amsterdammer*.[77] In December of 1947, Escher began his affiliation with *Donemus*, an important Dutch state music publisher that remains dedicated to the

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[71] Samama, 'Dutch Music in the 20th Century: Prelude to a New Day', 186
[72] Beatrijs Escher, 15. See also Samama 'Dutch Music in the 20th Century,' 186
[73] Ibid.
[74] Ibid.
[75] Beatrijs Escher., 15
[76] Ibid., 16
[77] Ibid.

preservation and dissemination of Dutch music to this day.[78] From 1947 to 1962, Escher also served on the administrative board of *Stichting Nederlandsche Muziekbelangen*, a foundation created by Jan Van Gilse to promote Dutch music. [79]

The years between 1959 and 1961 were experimental years for Escher. He felt his musical language had become passé, and he decided to study the physics of music and acoustic theory. He took an introductory course in sound mechanics, electrophysics, and sound technology in Delft.[80] There, he experimented with electronic composition at the electronic studios of Delft and Utrecht. He also studied with Pierre Boulez in Baden-Baden November 3–7, 1960.[81] Escher experimented for a time with serialist procedures and electronic music, but he eventually realized that these techniques were not compatible with his personal musical aesthetic nor his psyche. However, He remained committed to the study of modern music and gave a series of eighteen lectures on the structure and form of Debussy's music and its connections with the serialist techniques of Boulez.[82]

In 1961 and 1962, Escher served as secretary on the board of the Dutch Society for Contemporary Music. From 1964 to 1977, he worked as a senior scientific assistant at the University of Utrecht where he taught "Aspects of Contemporary Music."[83] This post allowed him an opportunity to lecture about the interaction between sound and physiological processes

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[78] Beatrijs Escher., 16
[79] Ibid.
[80] Ibid., 17
[81] Elmer Schonberger, "Serialism in The Netherlands, Pro and Contra," 675
[82] Beatrijs Escher, 17
[83] Ibid.

while he continued to explore his own interests in acoustic theory.[84] Escher was awarded the *Johan Wagenaar Prize* in 1976 for the achievement of his musical output.[85]

In December 1979, Escher was diagnosed with terminal liver cancer. The composer expressed his final wish for his friends and family to organize a complete collection of his output after his death and thus the Rudolf Escher Committee was formed.[86] The composer met with Donemus editor Nico Schuyt on several occasions, and agreements were made for Escher to correct and submit final revisions of a dozen works.[87] After these meetings adjourned, Escher removed himself from his work. On Feb 24th, 1980, he moved to Texel to enjoy "the silence, the birds, and the panoramic landscape with daughter Sidonie and son-in-law Sjef."[88]

On March 17th, 1980, Rudolf George Escher died at the age of 68 in a house in the Pijpersdijk, De Koog, a province in North Holland. Escher himself included a poem by Thomas Hardy within his obituary that echoes his compositional ethos. The poem, called *Proud Songsters*, reflects on the beauty of birdsong at evening but recalls that a year ago there were no birds, only "particles of grain, earth, air, and rain." [89] These are the building blocks that allow for the creation of the birds in the first place, just as Escher used the smallest of musical elements, the interval, to create large works.

Rudolf Escher's Musical Language and Ethos

As with any composer of merit, Rudolf Escher's music is both eclectic and individual, drawing from both the Western Classical tradition and the progressive trends of the twentieth

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[84] Beatrijs Escher, 17
[85] Ibid., 18
[86] Ibid.
[87] Ibid.
[88] Ibid.
[89] Beatrijs Escher, 19

century. Though the music may appear complicated at first glance, many of the elements involved are known features of the classical tonal system, requiring only a foundational application of twentieth century compositional techniques before patterns begin to emerge. Once a base of knowledge is built, readers will find the music easier to analyze and comprehend.

In the history of Western music, one can encapsulate the developments of the twentieth century in a single word: autonomy.[90] Musical elements that were once intricately bound to the Western tonal system became independent of one another. These advancements in compositional technique are frequently tied to the efforts of three prominent composers: Claude Debussy, Arnold Schoenberg, and Igor Stravinsky. The music of Claude Debussy is frequently referenced as the "emancipation of sound," based on the composer's intuitive soundscapes that avoid the traditional functions of chords within the tonal system.[91] Schoenberg's music showed that music without tonality could form a cohesive whole outside of the confines of the tonal system. His use of unresolved dissonances and refusal to employ the dominant seventh chord and its resolution, the tonic chord, is frequently referred to as the "emancipation of dissonance."[92] Last of these is Igor Stravinsky whose unique and highly imaginative concept of rhythm led to new and complex forms of meter, and an independent role for rhythmic devices.[93]

Alongside these developments came a reaction against the extreme subjectivity of the Romantic period. Prior to the twentieth century, the process of composition and musical enjoyment was highly subjective because composers and listeners projected themselves into the

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[90] Ton de Leeuw, "Music of the Twentieth Century: A Study of Its Elements and Structure." Note: The use of the word "autonomy" to describe 20th century musical trends is common in modern theoretical works. It is not my original term but one that is used frequently to describe the independence of musical elements outside of the functional tonal system. De Leeuw uses this term as well.

[91] David Burge, "Twentieth-Century Piano Music," 10

[92] Burge, 27

[93] Ibid., 88

musical material.[94] This led to a "hero complex" in the minds of musicians and their audiences. Dutch composer and theorist Ton de Leeuw states that, "The making of music to convey one's own personal emotions arose only at a time when the artist could feel that he was the center of the world, in which there was only one form of servitude, namely to himself."[95] Composers who rejected this Romantic aesthetic strove for musical objectivity. They aspired to create music that could depict their purely musical thoughts clearly and without subjectivity.[96] De Leeuw also offers an intriguing bit of wisdom: "When individualism increases, signs indicate that subjectivism decreases."[97] Though this sounds counterintuitive, I believe that what de Leeuw is suggesting is that the more individual and sophisticated a composer's musical language is, the less subjective a performance or hearing of their music can be. This is because unique music demands a commensurately novel presentation on the part of performers to convey the expressive and narrative elements embodied in each composer's language.

The rejection of subjectivism in music was also influenced by increases in mechanization and scientific discovery around the turn of the twentieth century.[98] These advances in technology held great promise and hope for many, but there were others who experienced these changes with great anxiety, as they occurred simultaneously with the increased political tensions that ultimately led to World War I.[99] On one hand, the Expressionists in Germany pushed the tonal system to the brink of atonality as they sought greater subjective expression. Their music was so subjective that many found nothing relatable within it and Expressionist works were viewed with

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[94] Ton de Leeuw, "Music of the Twentieth Century: A Study of Its Elements and Structure," 12
[95] Ibid.
[96] Ibid.
[97] Ibid.
[98] De Leeuw, 19
[99] Ibid.

great skepticism.[100] On the other side of the spectrum rose several literary and psychological movements that rejected the intellectualism of the Expressionists. Surrealism appeared around 1917 and searched for the true reality of mankind in the unconscious mind.[101] The surrealist movement stemmed from the thought of psychologist Carl Jung, who suggested that it is the "innate collective unconscious that allows man to understand human symbols across cultures."[102] Surrealism therefore was a revolt against the limited world of logic of the Expressionists. Surrealist artists sought to discover the full experience of human consciousness, capturing the sensory alongside the intellectual.[103] This movement was the continuation of the work of the Impressionists who sought to communicate the impression or visual impact of nature independently from the subjective emotion of Romantic art. This new musical objectivity had a powerful influence on Dutch musicians like Willem Pijper. As a result, Dutch twentieth century musicians pursued a more-French aesthetic to the exclusion of German expressionism.[104]

A final occurrence of note is the resurgence of interest in contrapuntal and linear techniques in music. In The Netherlands, the revival of polyphonic practices can be traced to the efforts of Sem Dresden and the founding of his Renaissance madrigal society in 1914.[105] This group took its inspiration from the earlier *Society for North-Netherlands History of Music*, which was founded in 1868. Dresden became one of Pijper's staunchest allies and promoted the creation of Dutch music through *a cappella* polyphonic singing.[106] By the 1930's, the tonal

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[100] De Leeuw, 22
[101] Ibid., 21
[102] Ibid.
[103] Ibid.
[104] De Leeuw, 29
[105] Ringer, 433
[106] Ibid., 430, 433

system was considered old-fashioned, and its musical elements of harmony, melody, and rhythm were treated independently of one another. The revival of counterpoint and polyphonic practices was the final element that paved the way for a composer like Rudolf Escher.

Rudolf Escher's musical language is in large part a result of his philosophical and aesthetic views about what music should be. In general, one can say that his music is based on two key principles that govern all else: intelligibility and memorability. Intelligible music requires relaying sounds to the listener that make the music understandable. Memorability goes alongside intelligibility but requires good listening on the part of the audience. Escher says, "The wonders of any music will never be revealed if this doesn't happen in a natural way: sounding and listening. Good sounding and good listening. The second is instantly impossible when the first is not fulfilled."[107] Memorability was important to Escher because he understood that if one could not remember any aspect of a piece, one was unlikely to investigate it further:

> On music rests the doom of transience. While sounding, it goes by, and is over. For a limited time, our memory is capable of relating past sound to a present sound, but with the onset of silence (and what a silence, often what a transformed silence!), there is nothing left of that intangible 'construction.' Neither the ability to remember melodies, fragments, even the entire work (it is after all possible to retain this perfectly in one's head), nor the ability to talk about the work, or to read it by using the score, can remedy that lack of reality.[108]

Musically this points to a need for repetition, which manifested itself in Escher's choice of traditional forms to organize his musical thoughts. Leo Samama also suggests that remembering music does not have the same physical or psychological impact as experiencing the music live and that careful listening must therefore be the primary task for the listener.[109]

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[107] Leo Samama, "The Meaning of Music: Hearing, Listening, and Remembering," 131
[108] Samama, "The Meaning of Music: Hearing, Listening, and Remembering, 132-133
[109] Ibid., 134

Aside from matters concerning sounding and listening well, Escher's music is crafted in a manner that promotes ethos above pathos. He sought to convey meaning in purely musical terms, independent of subjective emotion and extra-musical connotations. Part of this can be explained by the musical mentality of Dutch culture during Escher's life. The Dutch people were more emotionally reserved than their German neighbors.[110] Leo Samama says that the reason for this may be "a kind of national embarrassment for exaggeration" that led Dutch composers to create music that is "at most playful with a serious touch, always first and foremost well-formed and often a bit bloodless."[111] Samama also suggests that this was a conscious choice on the part of Escher who sought to convey concrete thoughts in his music and not the emotional reaction to those thoughts.[112] Samama links this choice to the opposing French and German influences within Dutch musical culture but admits that most Dutch composers use elements from both.[113]

Arcana, written during the years of World War II, is representative of Escher's mature style, and contains both ethos and pathos. In Samama's words, Escher's music is "lyrical, expressive, and elegiac, with a great propulsive force, more French than German in its orientation."[114] Escher's music favors the new sound possibilities of the French over the goal-oriented, thematically driven music of the late-Romantic Germans. His works contain influences of Mahler's encapsulated symphonic worlds (a world per piece), but the expression is much more rational and restrained.

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[110] Samama, "Dutch Music in the 20th Century," 208
[111] Ibid.
[112] Samama, "Dutch Music in the 20th Century," 40
[113] Ibid.
[114] Leo Samama, "Rudolf George Escher" from *Grove Music Online*

The musical depiction of violence plays a far greater role than that of any pathetic affect or emotional response in Escher's war era works. Samama contends that these three works, *Musique pour l'esprit en deuil* (Music for the Spirit in Mourning) (1941-43), the *Sonata Concertante* for cello and piano (1943), and the piano suite *Arcana* (1944-45) form a war triptych.[115] Their harmonic elements are more acerbic and their textures thicker than those of his later works, presumably to express Escher's thoughts about the war. Escher said that these works function as "a direct response of the creative and therefore constructive spirit to the destructive violence of a depraved political system and its military terror machine."[116] It was the composer's objective spirit, not his subjective pathos that was the catalyst for this music. Speaking about the wartime works, Escher says:

> My work from this [period] has taken on a kind of heaviness, a doggedness here and there, which make it clearly aware as having grown in the midst of disasters. That, to me personally, is the very ethical sense of it: that they are constructs of the mind, at a time when mind (if you can still call it that) is used almost exclusively for utterly destructive purposes.[117]

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[115] Leo Samama, "Rudolf George Escher" from Grove Music Online

[116] Ibid.

[117] Samama, "Dutch Music in the 20th Century," 210

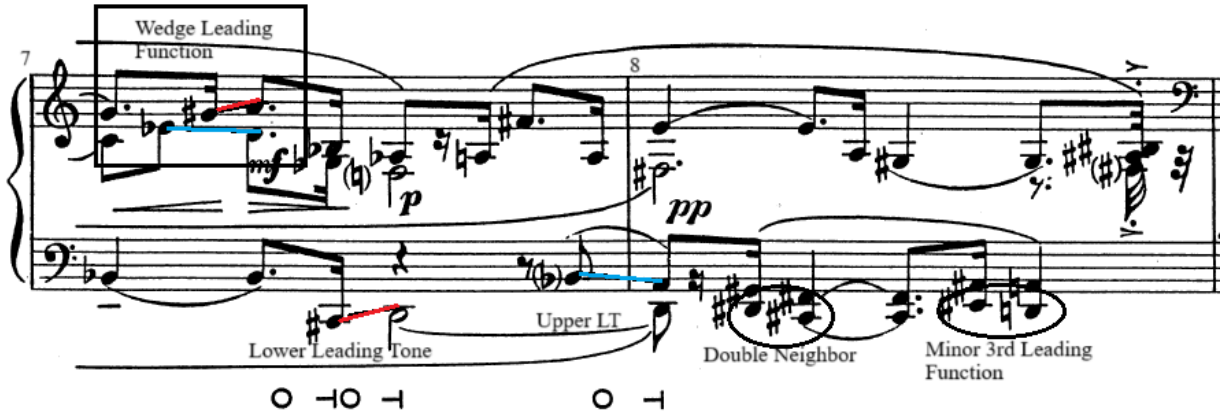
CHAPTER II: ANALYZING ESCHER'S HARMONIC LANGUAGE IN ARCANA

Getting into Escher

The suite for piano called *Arcana* (1944-45) is representative of Escher's wartime writing and his personal musical aesthetic. Though one cannot hope to encapsulate the spirit of an individual within the scope of this study, I believe that *Arcana* contains most of the remarkable traits of the composer's unique language. By examining the underlying harmonic theory within this music, we can gain insight into how the music is constructed. Before turning to any twentieth century theoretical concepts within *Arcana*, it is important to revisit a few familiar elements from the tonal system that are present. This music will sound atonal to many ears because of its non-functional elements, but it is a tonal language at its heart.

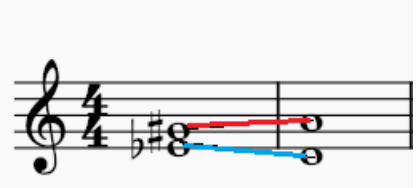
Escher's tonal procedures include various types of voice leading function, tonicization procedures, and modulatory techniques that can be found in the standard repertoire. Each of these topics will be discussed in turn. First, the gravitational pull of leading tones is still present though not always in the manner of the tonal system. Throughout the analysis in this study, I will refer to this phenomenon as *leading function*. Leading tones can be upper or lower as shown in Example 1. The voice leading trajectory is shown as blue and red lines for upper and lower leading tones respectively.

Example 1. *Preludio* mm. 7-8: Leading Function



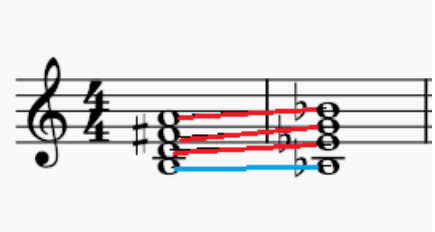
This excerpt from Mm. 7-8 of the *Preludio* shows both types of leading tone. The C-sharp functions as a traditional leading tone and resolves to D. The upper leading tone B-flat resolves down to A, thereby defining the perfect fifth of the foundational D major triad. The encircled double neighbor figure in measure 8 contains both the upper (D-sharp) and lower leading tones (C-sharp) that tonicize D. Measure 7 of Example 1 also contains a small wedge figure that expands outward to create the D perfect fifth. This wedge contains both upper and lower leading tones and is isolated in Example 2.

Example 2. *Preludio* m. 7: Wedge Leading Function



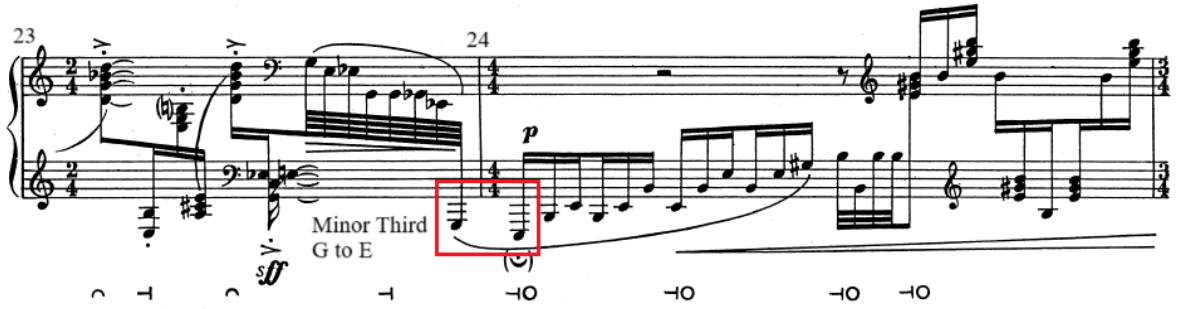
Escher also uses leading function to create relationships between triads that have no tonal connections. A prominent example of this in *Arcana* is the Bm^7 chord that frequently resolves to E-flat major through extremely smooth voice leading. Example 3 shows the voice motion between these two chords. All tones in the Bm^7 chord move to their neighbors in the E-flat major triad by half step.

Example 3. B minor 7 resolves to E-flat major



A final type of leading function to consider is the descending minor third and perfect fifth in the bass. These intervals do not fit the traditional definition of a leading tone, but they define tonics all the same. The leading function of the descending minor third is not common in tonal music, but it is common in octatonic music. There are eight discrete minor third dyads in each octatonic scale. The minor third is the most common interval found in octatonic scales, and a minor third dyad creates centricity based on the listener's perception of the bass. Example 4 shows measures 24 and 25 of the *Finale* and represents a common use of this leading function in Escher's music.

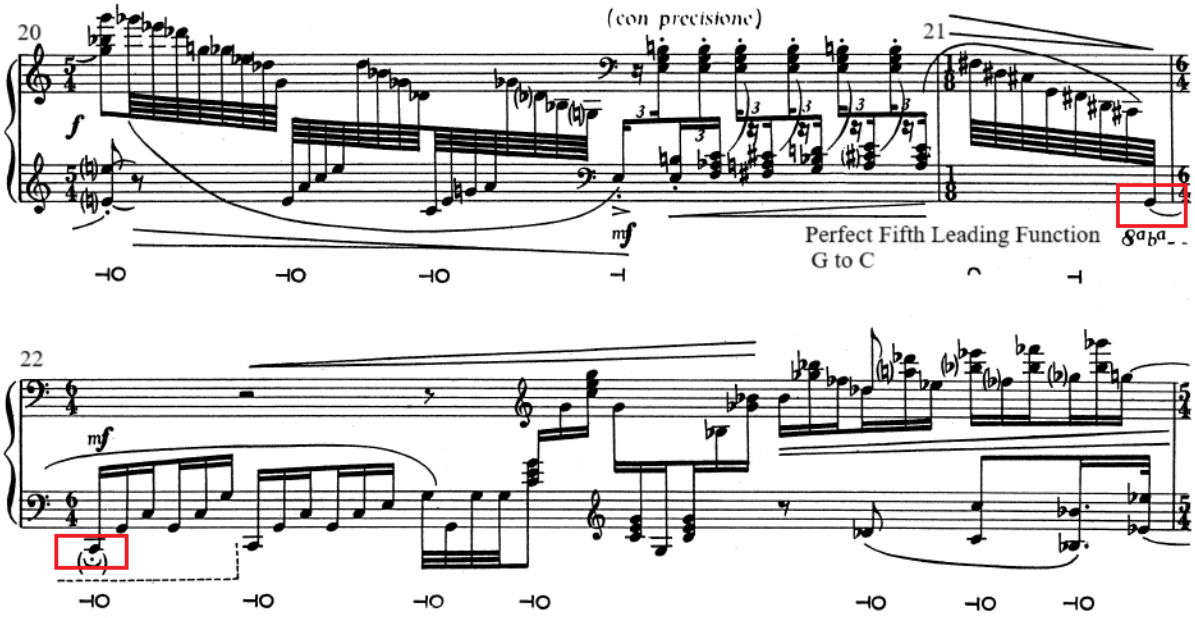
Example 4. *Finale* mm. 23-24: Minor Third Leading Function



Centricity is created as the low G in measure 23 moves to the E on the downbeat of measure 24, signaling a new tonal center of E. The descending perfect fifth is very common in tonal music and frequently defines tonal centers. Example 5 shows measures 20 through 22 of the *Finale*.

The low G in the bass clef of measure 21 descends a perfect fifth to the C in measure 22. This creates centricity on C despite the harmonic context of the surrounding measures.

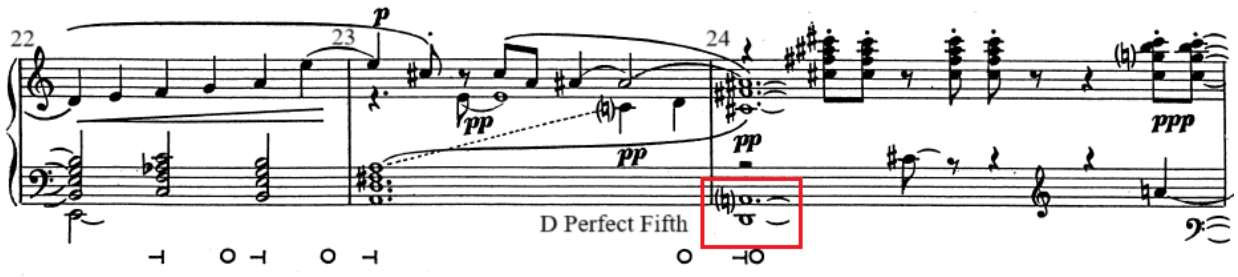
Example 5. *Finale* mm. 20-22: Perfect Fifth Leading Function



In addition to serving an important leading function, the perfect fifth plays a structural role as a vertical sonority in Escher's music. Though the music frequently employs chordal extensions beyond the seventh, the underlying chordal tonic can be determined by identifying the chord's perfect fifth. Example 6 shows measures 22 through 24 of the *Ciaccona*. This chord is created from the juxtaposition of a D major and an F-sharp major triad. Some may prefer to call this a D major 7 with an added sharp 5, but the presence of the perfect fifth D-A suggests that D is the tonic. As Dutch composer and theorist Ton de Leeuw suggests in his book *Music of the Twentieth Century*, "Many a chord in modern scores, however 'coloured' it may be, can be

reduced to simple tonal proportions thanks to a basic 5th that unambiguously determines its structure."[118]

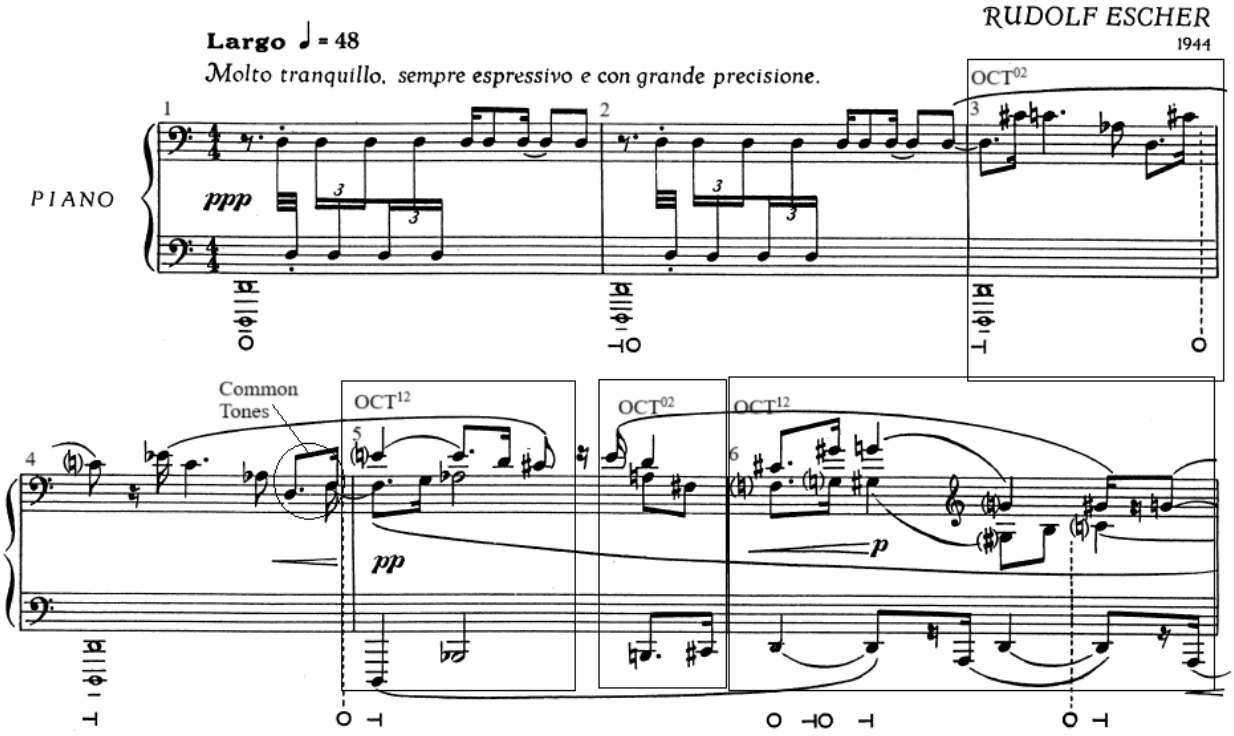
Example 6. *Ciaccona* m. 6: Perfect Fifths Indicate Centricity



Finally, the concept of modulation is more flexible in this music than in traditional tonality. Escher rarely uses a tonal modulation scheme as he usually avoids functional occurrences of the dominant 7th chord. Chords in this music are typically nonfunctional so one must look to the underlying scale network to determine the pitch collection. In *Arcana*, the pitch content is derived largely from octatonic networks that are unstable because of their symmetrical construction. Modulation is usually achieved via common tones that are shared between different octatonic scales. This is visible at the beginning of the *Preludio* in measures 3 through 6, as shown below in Example 7.

[118] Ton de Leeuw, "Music of the Twentieth Century," 90

Example 7. *Preludio* mm. 1-6: Common Tone Modulation Between Octatonic Scales



Modulation is achieved by the common tones D and F that are shared between the two octatonic scales OCT^{02} and OCT^{12}. Octatonic scales are named for their pitch content, which is described using integer notation in superscripts. Therefore, OCT^{02} contains the pitches C (0) and D (2), while OCT^{12} contains C-sharp (1) and D (2). These integers also tell us where the whole or half step occurs in each scale. One can then determine the rest of the scale by following the alternating pattern of a whole step followed by a half step, or vice versa. The C-sharp in measure 3 does not exist within OCT^{02} and can be interpreted as a chromatic upper neighbor to C. This music often incorporates non-octatonic pitch collections into the underlying octatonic framework. The following discussion provides a thorough investigation of the music's pitch content with regards to octatonicism and its interaction with a number of Escher's noteworthy compositional processes.

Octatonicism in *Arcana*

One of the most striking elements of *Arcana* is its incorporation of octatonic scales and subsets as a rich source of harmonic and melodic material. Octatonic scales are symmetrical arrangements of eight notes with alternating whole and half steps.[119] The symmetrical pattern of these scales prevents centricity and functional harmony within each scale. As a result, discussions regarding octatonic intervals and pitches require enharmonic equivalency. For example, a D-sharp may be immediately respelled as E-flat depending on the harmonic context of a passage. Many of the intervals described in this discussion are regarded as absolute intervals regardless of their pitch spelling. Absolute intervals describe the sound of a verticality but not necessarily its tonal function. Most of this music uses non-functional harmony, so a dyad like C – D-sharp is referred to as a minor third to describe its sonority.

The octatonic scale was known in The Netherlands as the "Pijper" scale, a testament to Willem Pijper's influence and his interest in octatonic networks.[120] Outside of The Netherlands, the octatonic scale was codified as Mode 2 of Olivier Messiaen's "Modes of Limited Transposition."[121] Example 8 shows the three possible transpositions of these scales, beginning with their superscript namesakes. The starting tones are not tonics.

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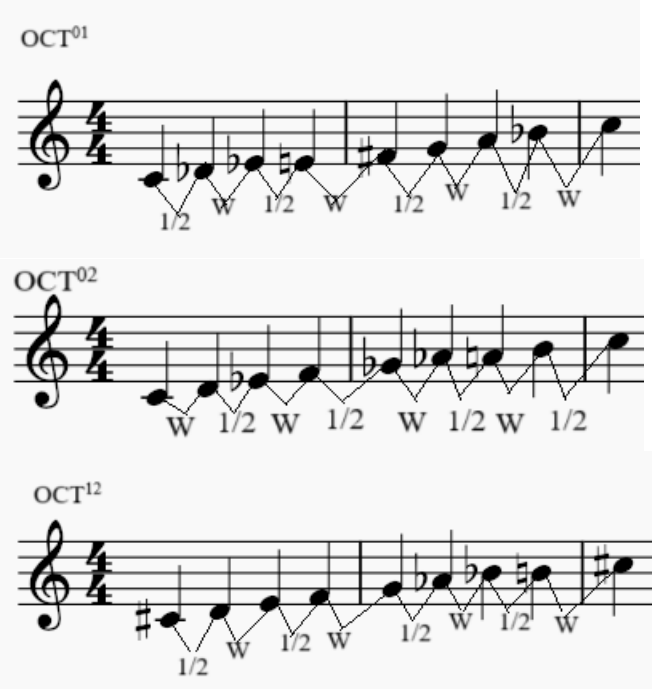
[119] Charles Wilson, "Octatonic Scale," from *Grove Music Online*

[120] Ibid. See also Ringer, 436. As previously discussed, few modernist composers of the early 20th century were known in The Netherlands, giving further rise to the moniker 'Pijper' scale.

[121] De Leeuw, 82

Example 8. The Three Transpositions of Octatonic Scales



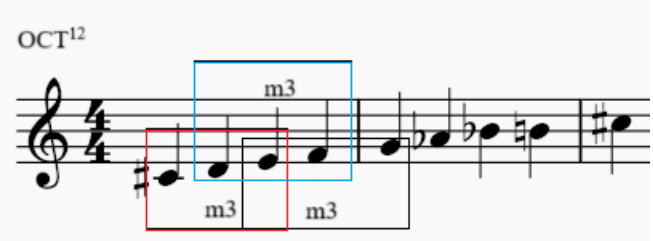
Many of the characteristics of Escher's writing come from the intervallic properties within the octatonic scales. For example, Escher's use of melody is simpler than in other Western tonal compositions in most cases. Long and highly developed themes are not characteristic of his work. Escher instead follows the melodic tendencies of Debussy and his contemporaries by utilizing small intervals for their inherent sonic properties and to create longer motives.[122] For Escher, the interval is the primary means of construction, and more specifically, intervals that are characteristic of octatonic systems.

Aside from the alternating half and whole steps that are the genesis of octatonic scales, the most abundant interval is the minor third. Any linear motion of three notes within an octatonic scale spans a minor third. In OCT^{12} for example, starting on C-sharp and moving in a

[122] Ton de Leeuw, "Music of the Twentieth Century," 60-65

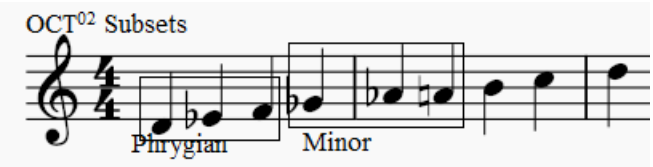
stepwise manner to E is a minor third. Likewise, starting on D and moving to F is a minor third. This is a result of the scale's symmetrical construction built on alternating whole and half steps. Example 9 shows the first three minor third spans, or trichords, in OCT^{12}. The overlapping boxes also show how each minor third links with the next, saturating the scale with minor thirds.

Example 9. Linear Spans of Three Notes Create Minor Thirds



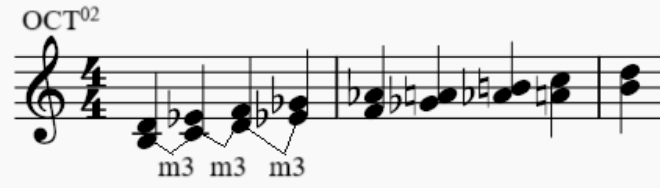
There are 8 minor-third trichords in each octatonic scale, but they are not all the same. Example 10 shows the two possible qualities of the minor third subset within OCT^{02}. I call the first "Phrygian" because it contains the same intervallic spacing as the start of the Phrygian mode: a half-step followed by a whole step. Likewise, the second is called "Minor" because its intervallic spacing is the same as the minor scale's first three notes: a whole step followed by a half-step.

Example 10. Phrygian and Minor Trichords in OCT^{02}

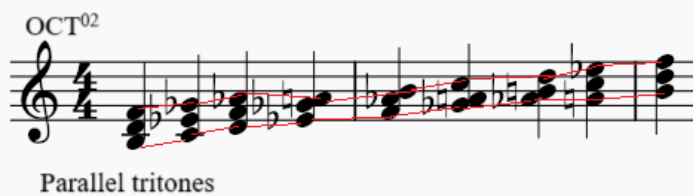


It is possible to create parallel minor thirds in octatonic scales as shown in Example 11. As a result, parallel root-position triads create parallel tritones as indicated in Example 12 with red voice leading lines.

Example 11. Parallel Minor Thirds in OCT[02]

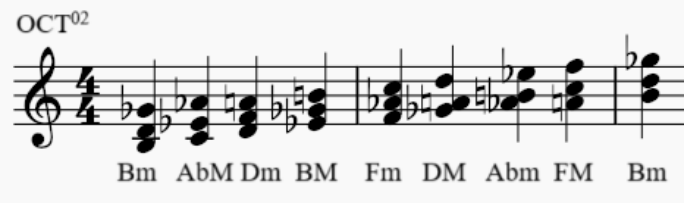


Example 12. Parallel Root-Position Triads Create Parallel Tritones



Major and minor triads can be created from octatonic scales if one views their pitch content with enharmonic equivalence. Example 13 shows the creation of major and minor triads in OCT[02]. Since octatonic scales are unstable and nonfunctional, enharmonic equivalence is used to spell out traditional triads when their usual pitch content is absent. The B minor chord could just as easily be spelled with an F-sharp instead of a G-flat. Escher uses enharmonic equivalence to create traditional triads that are easier to read for the performer. Example 13 also shows how triads alternate between minor and major in parallel motion.

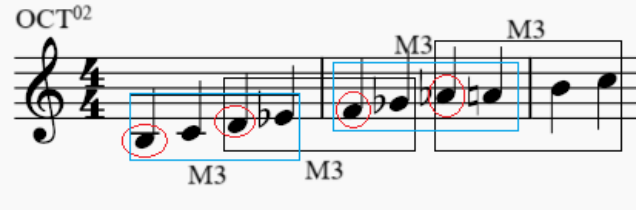
Example 13. Major and Minor Triads in OCT[02]



The major third also exists within octatonic scales but these occur less frequently than the minor third. Example 14 presents OCT[02] beginning on B. Linear spans of four notes beginning

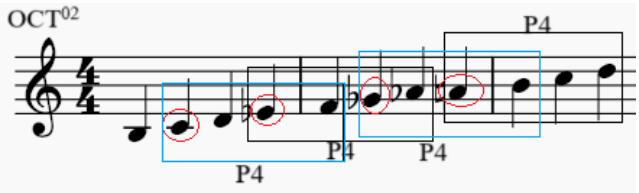
on the pitches that outline the B fully-diminished seventh chord (encircled in red) fill major thirds. There are four tetrachords that span major thirds in each octatonic scale.

Example 14. Major Third Tetrachords in OCT^{02}



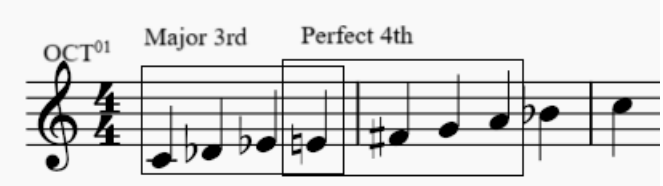
One way to recognize octatonic scales is by observing the presence of fully diminished seventh chords like the B fully-diminished seventh referenced above. Octatonic scales can be created by combining one fully diminished seventh chord with another that is a half-step away. If the B^{o7} chord is combined with the C^{o7} chord, the pitch content of OCT^{02} is created (B - C - D - E-flat - F - G-flat- A-flat - A). In OCT^{02}, any linear motion of four notes that begins on a note of the C^{o7} chord (encircled in red) will span a perfect fourth. Example 15 shows the creation of perfect-fourth spanning tetrachords starting on the notes C, E-flat, G-flat, and A.

Example 15. Perfect Fourth Tetrachords in OCT^{02}

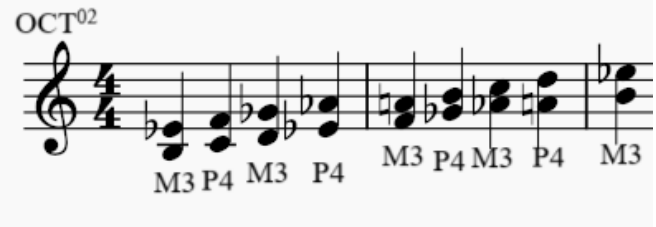


As with the major third tetrachords, there are four perfect fourth tetrachords. Example 16 shows the two qualities of tetrachord found within octatonic scales. As vertical sonorities, the major third and perfect fourth alternate with each other when in parallel motion (Example 17).

Example 16. Major Third and Perfect Fourth Tetrachords

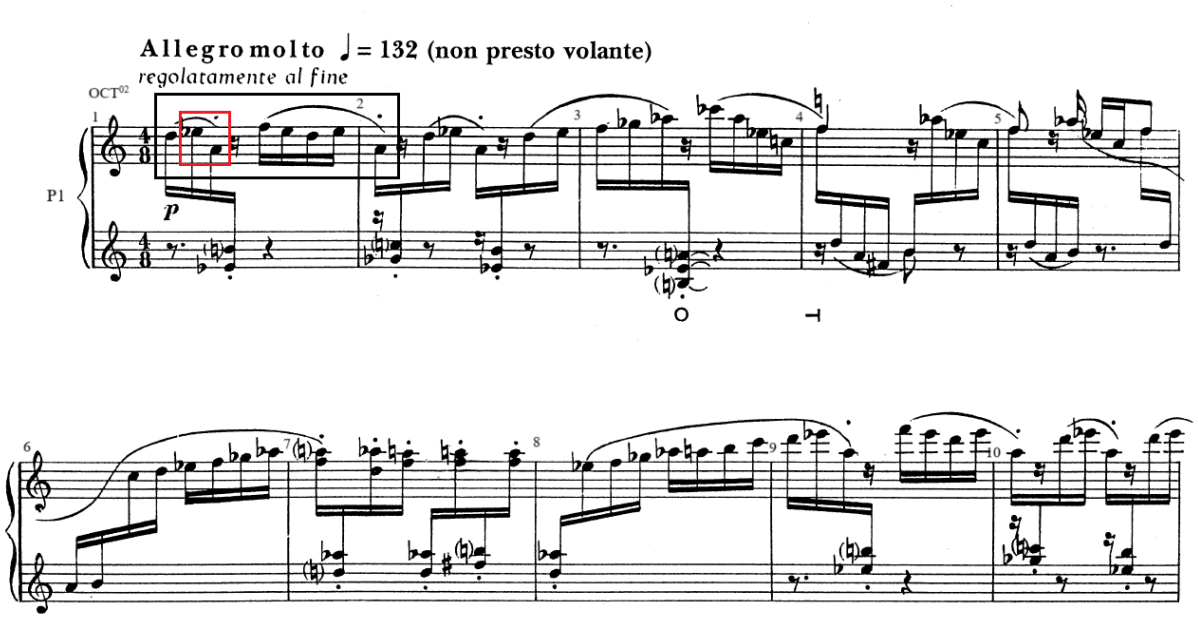


Example 17. Major Thirds and Perfect Fourths Alternate in OCT[02]



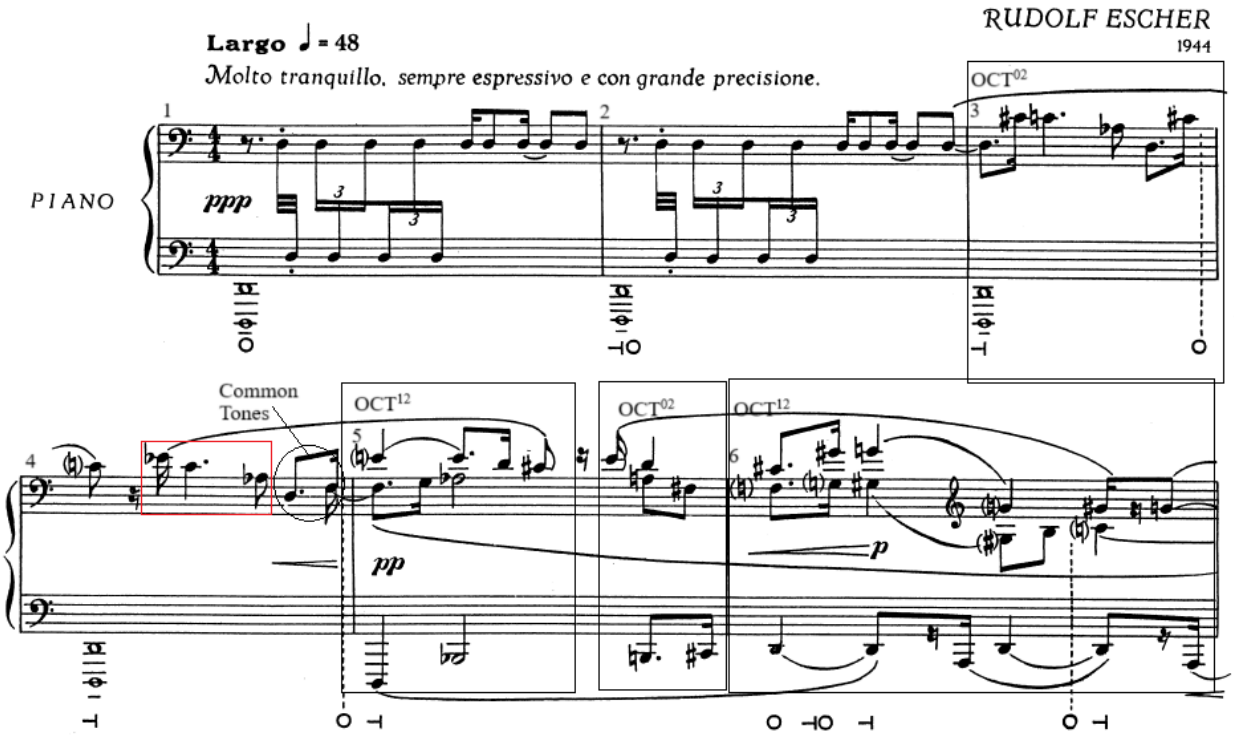
The above subsets contain the primary intervals that Escher uses in his music, but there is one more important interval to consider: the tritone. This interval bisects an octatonic scale, and it is therefore the most symmetrical interval available. It is recognizable in *Arcana* as the characteristic interval of themes that occur in the *Toccata* and development of the *Finale*. The box in Example 18 shows this in the primary theme (P1) from the opening of the *Toccata*, with the tritone boxed in red.

Example 18. *Toccata* mm. 1-10: The Tritone in the Primary Theme (P1)



Another use of the tritone is to set the chord or centric tone of a passage against its tritonal partner. A clear use of this technique occurs near the beginning of the *Preludio* in measure 4 of Example 19. The melodic material outlines an A-flat major chord (boxed in red) over the bass low D.

Example 19. *Preludio* mm. 1-6: Tritonal Juxtaposition



Harmonic Expansion

Recognizing octatonic scales is a first step in understanding Rudolf Escher's harmonic language. As discussed, octatonic scales have no definite tonal center due to their symmetrical construction of whole and half steps. In the ambiguous harmonic landscape these scales generate, the creation of functional tonal centricity within a single octatonic scale is impossible. Though stable triads can be created on an octatonic scale, their partner dominants cannot. In OCT^{02} for example, B major or minor can be created, but there is no A-sharp or C-sharp to create its dominant. As a result, one must look outside of OCT^{02} to create tonal centricity. Escher's musical language blends various pitch collections, creating a fluid and highly flexible harmonic environment. Octatonic scales blend with diatonic, whole tone, and modal collections in a process I refer to as "Harmonic Expansion." By harmonic expansion I mean the growth of

sonorous materials available via the introduction and combination of additional pitch collections. In *Arcana*, Escher frequently begins sections of music using a single pitch collection and then expands the harmonic content slowly over time. There are traces of this technique in the music of Claude Debussy, and Ton De Leeuw describes this process clearly in his analysis of *La Cathédrale engloutie*.[123]

Example 20 recreates part of De Leeuw's analysis and shows the second page of Debussy's piece. Measures 16-19 draw pitches purely from the B major pentatonic scale (B – C-sharp – D-sharp – F-sharp – G-sharp). Measure 19 expands to hexatonic centered on E-flat (E-flat – F – G – B-flat – C – D). Further harmonic expansion occurs in measure 22 with the arrival of G Heptatonic.[124] As De Leeuw suggests, the notes B and E are used only as passing tones here, limiting their impact on the harmonic progression.[125] B is avoided as a leading tone and E is not allowed to sound a third above C. The arrival of the low C in measure 28 gives the feeling of tonal arrival after the G heptatonic environment. The pitch E is finally allowed to function as the quality-defining third above C, further strengthening the arrival of C diatonic.[126]

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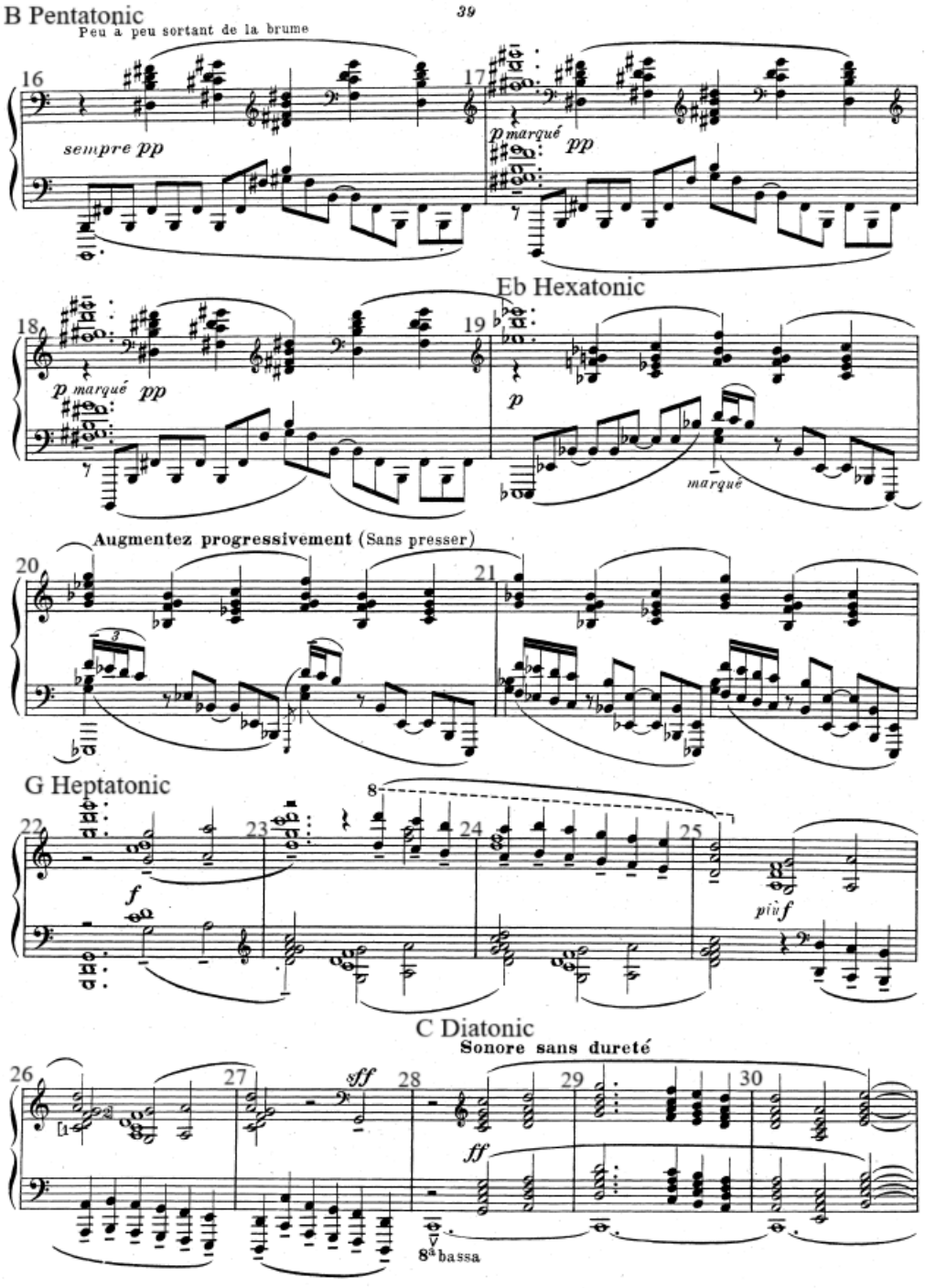
[123] De Leeuw, 80-81

[124] De Leeuw uses the term "Heptatonic" rather than "Mixolydian" in his analysis, which is reproduced here.

[125] De Leeuw, 80

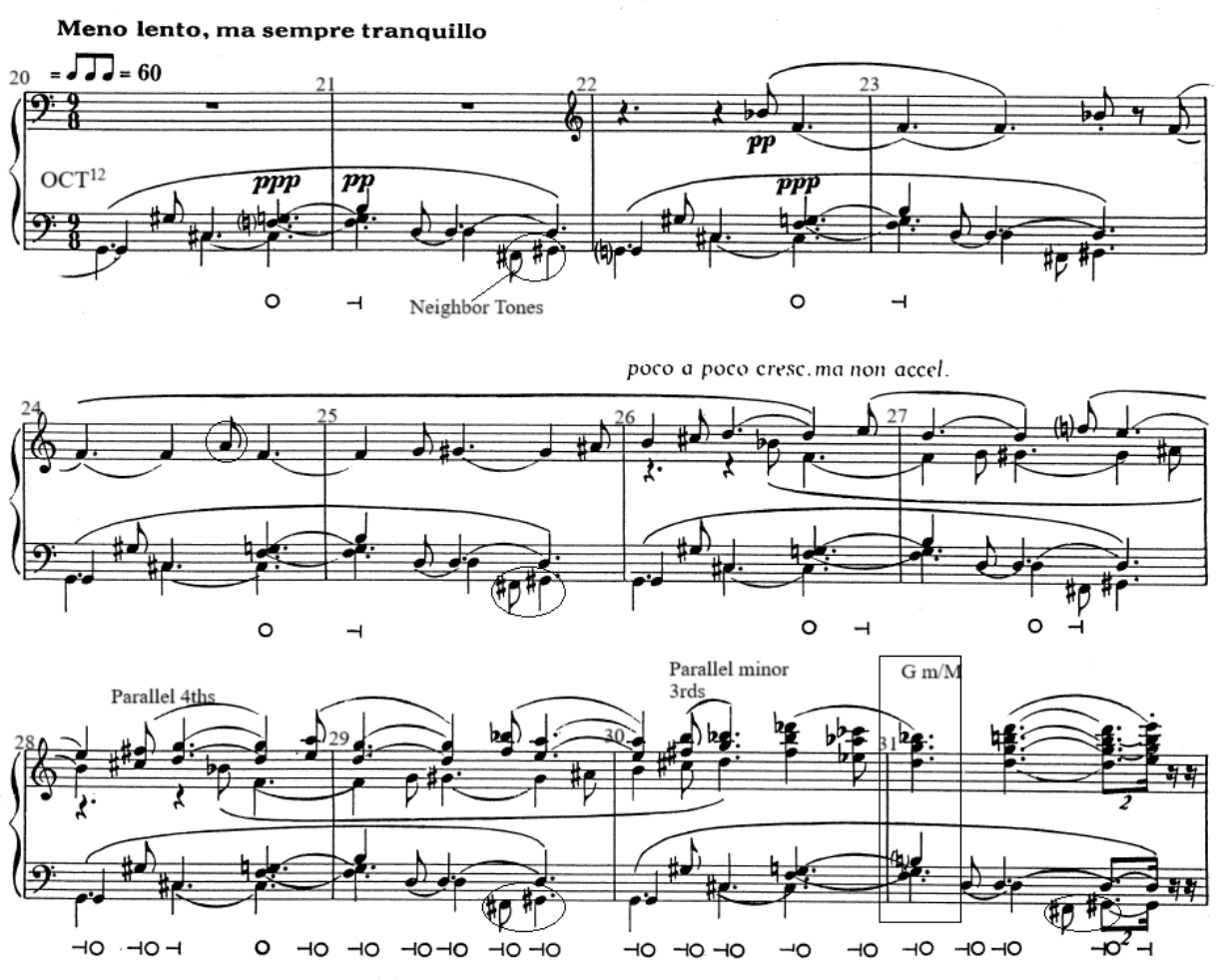
[126] Ibid.

Example 20. Harmonic Expansion in Debussy's *La Cathédrale engloutie*



In *Arcana*, Escher uses a similar technique to enrich his harmonic palette and create forward momentum. Example 21 shows this technique in measures 20 through 31 of the *Preludio*. Measure 20 marks the beginning of the B section of the movement. This passacaglia-like section begins almost completely octatonic in OCT^{12} (G – G-sharp – A-sharp/B-flat – B – C-sharp – D – E – F). The non-octatonic element of note in this theme is the chromatic neighbor figure F#-G# which tonicizes G. The bass ground continues unaltered until measure 32. The treble clef melody is also almost completely octatonic and drawn from OCT^{12}. This melody begins with the perfect fourth B-flat to F. The A in measure 24 is not part of OCT^{12}. When the F moves to A, it sounds out of place given the octatonic environment. The full melody emerges in measure 25 as a rising octatonic scale. Measure 26 introduces a new statement of this melody in canon with the continuation of the previous statement. The top line continues to ascend in measure 28 and creates parallel perfect fourths above the second voice. The perfect fourth harmonization is used for its intervallic sonority and expands the harmony beyond the foundational octatonic scale by using pitches that exist outside of OCT^{12}. Measure 28 introduces a third statement of the treble theme. All three treble voices align with the second-inversion G minor chord in the right hand of measure 30. This introduces parallel minor thirds that do not exist within OCT^{12}, further expanding the harmony with parallel, second-inversion minor triads. The box in measure 31 highlights the presence of both major and minor triads on G, which both exist within OCT^{12}. The octatonic organization of measures 30-31 continues in the bass voices, while the final G major and E minor chords in the treble clef revert to OCT^{12} resources. Thus, Example 21 shows how Escher incorporates the perfect fourth and minor third as sonorities above the underlying octatonic system. The parallel sonorities in measures 29-30 expand the harmonic color of the melodic material, while the ground bass remains unchanged.

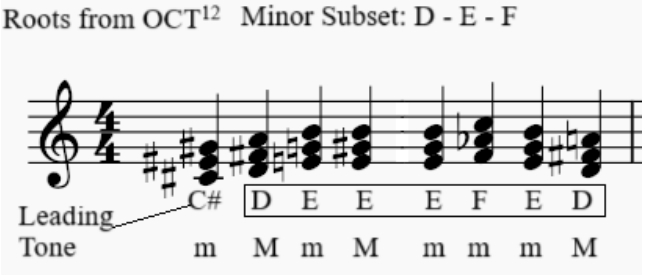
Example 21.Harmonic Expansion in the *Preludio*: mm. 20-31



Escher uses a similar technique to create harmonic progressions upon octatonic scales. The third movement, titled *Ciaccona*, contains two clear examples of this technique. Example 22 shows a harmonic reduction of Variation 3 beginning in measure 20. This variation is characterized by a progression that is built on a minor-third trichordal subset of OCT^{12}. The centric tone of D is tonicized by the presence of C-sharp and E. The octatonic subset D – E – F supplies the roots of the progression, but the harmonic content does not derive fully from OCT^{12}. Stable triads on D and F cannot be created within OCT^{12}. Escher uses the octatonic subset to

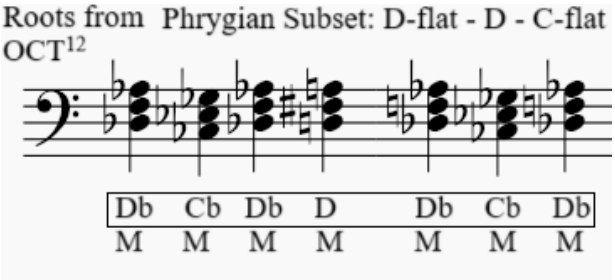
organize the progression but expands the harmony beyond OCT^{12} by using major and minor triads in parallel motion, built on the octatonic roots.

Example 22. *Ciaccona* mm. 20-23: Minor Trichord Subset Root Progression



Escher uses the Phrygian trichordal subset in a similar way. Example 23 is a harmonic reduction of measures 50-53 of Variation 6 in the *Ciaccona*. This progression emphasizes the Phrygian subset, which is characterized by the Neapolitan sonority of the D major triad which tonicizes D-flat by upper leading function. The inclusion of C-flat within the progression also tonicizes D-flat via lower leading function like it would in the Phrygian mode. OCT^{12} provides the organizing roots once again, with major and minor triads coloring the harmony. Thus, the Minor and Phrygian trichords create an octatonic foundation that can organize non-octatonic harmonic content.

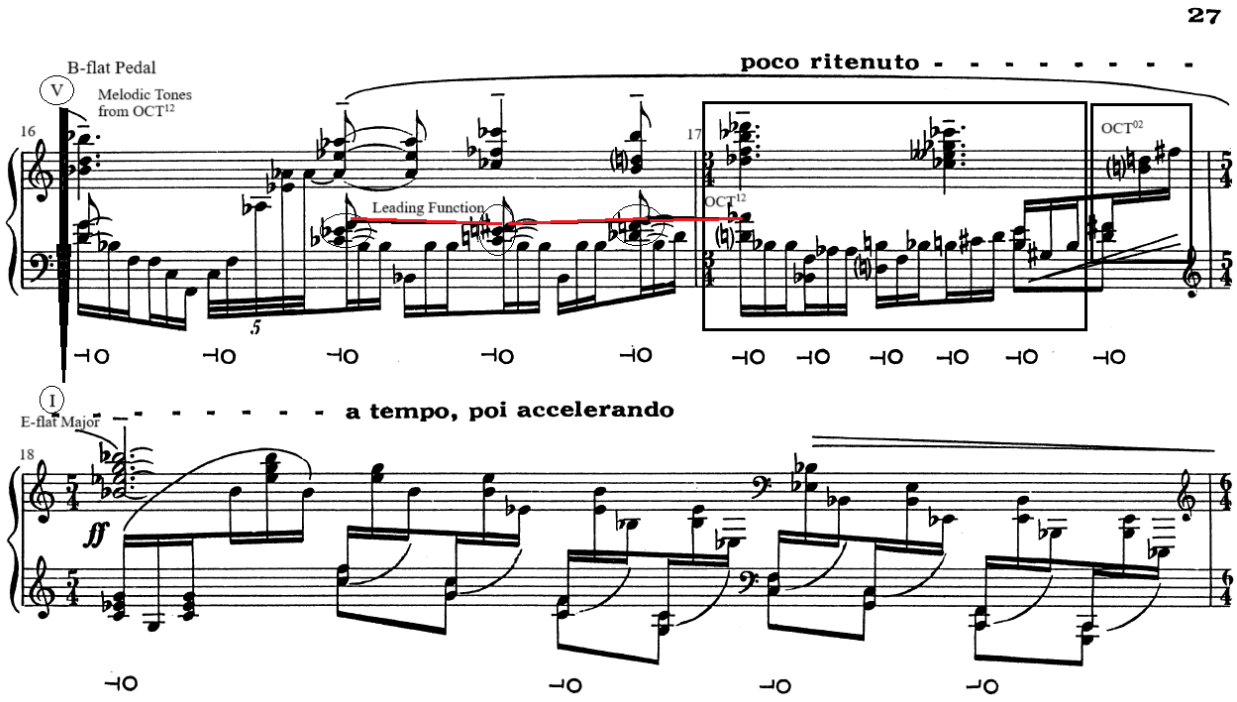
Example 23. Ciaccona mm. 50-53: Phrygian Trichord Subset Root Progression



Escher also uses tonal techniques to organize octatonic content. The most common of these techniques in his music is the pedal point. Some of these pedal points function in the tonal tradition. Example 24 shows a transitional passage from measures 16 through 18 of the *Finale*.

This transition is a prolongation of B-flat major as the dominant of E-flat. The B-flat pedal maintains the centricity of B-flat despite the surrounding harmony that has been enriched with octatonic elements. The encircled trichords in the middle range starting in the second half of beat in measure 16 can be viewed as octatonic or whole-tone segments. Their chromatic leading function is indicated with voice-leading lines. The C-flat minor chord in measure 17 of the right hand is enharmonically equivalent to B minor and fulfills a leading function to E-flat major like in Example 3. The resolution to E-flat is weakened by the inclusion of the pitch C, creating a C minor 7 chord or an E-flat chord with an added sixth. The music that follows in measure 19 is in C Major. Sonically, I hear measure 18 as an E-flat major chord that is colored with an added sixth. Either interpretation works in the context of the music. The pedal point above is a classic prolongation of the dominant. The tonal trajectory of the B-flat is kept in the foreground despite the chromaticism from the octatonic elements. The arrow indicates the trajectory of B-flat (V) to E-flat major (I).

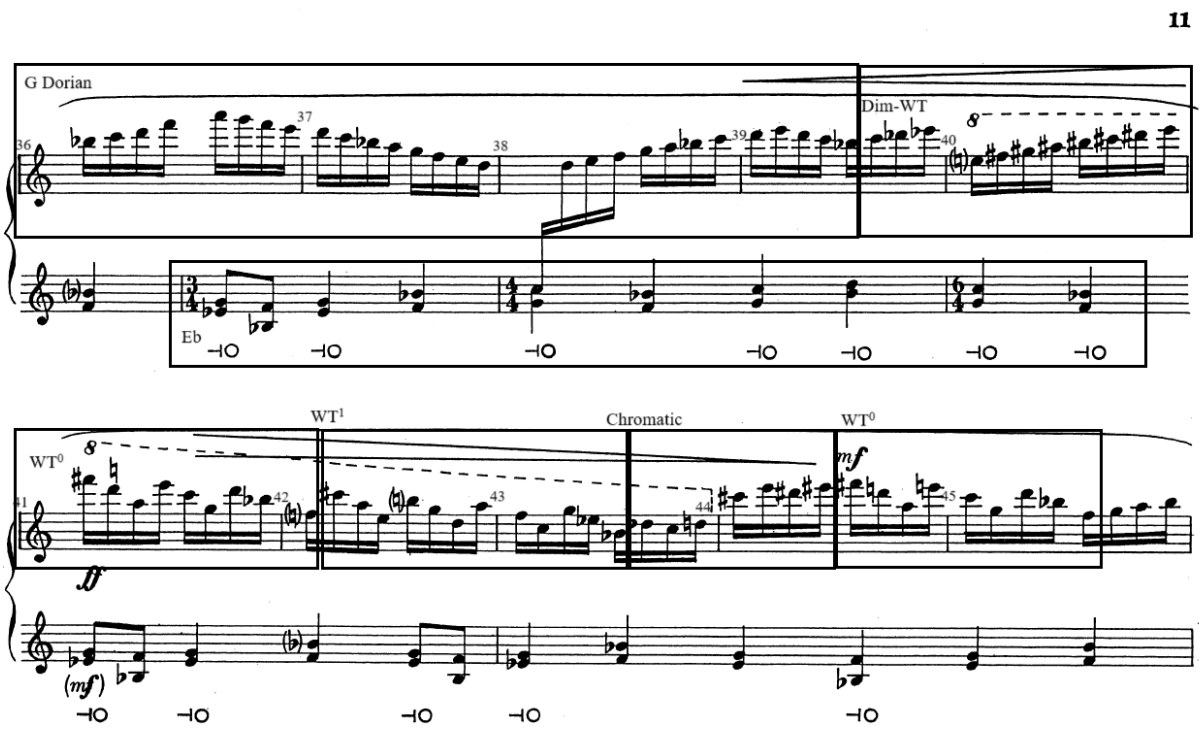
Example 24. *Finale* mm. 16-18: Prolongation of the Dominant



Escher also makes use of a twentieth-century type of pedal device known as a tone field.[127] A tone field prolongs a sonority in the same way a pedal point does in tonal music, but its pitch content can contain several or many different tones. Example 25 highlights an example of a diatonic tone field in measures 36 through 45 of the *Toccata*. The E-flat horn-call-like motive in the left hand functions like a diatonic pedal ostinato, maintaining an E-flat major sonority independent of the shifting pitch collections in the right hand.

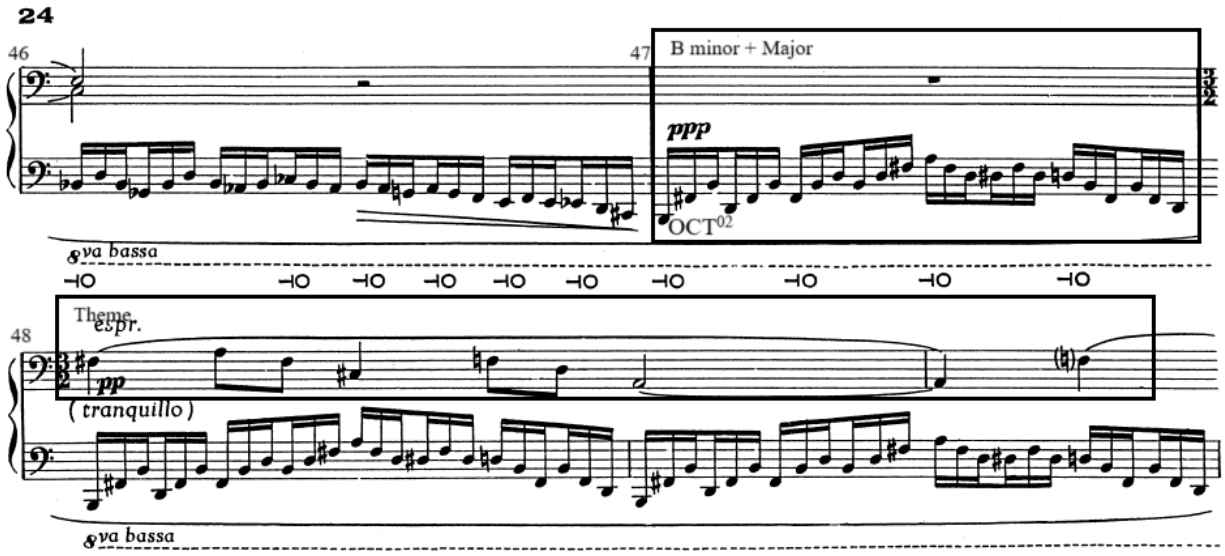
[127] De Leeuw, 83

Example 25. *Toccata* mm. 36-45: Diatonic Tone Field



Diatonic tone fields define clear tonics and qualities, but Escher's musical language is one of constant variation. Example 26 shows another type of tone field from measure 47 of the *Ciaccona*. Octatonic scales naturally contain materials that allow for the creation of polytonality. Measures 47-48 contain a bitonal tone field built on a single root that combines B minor and major from OCT^{02}. As with the diatonic tone field, this one maintains a B sonority in the background. The trajectory of the music is determined by the melody which functions independently of the tone field.

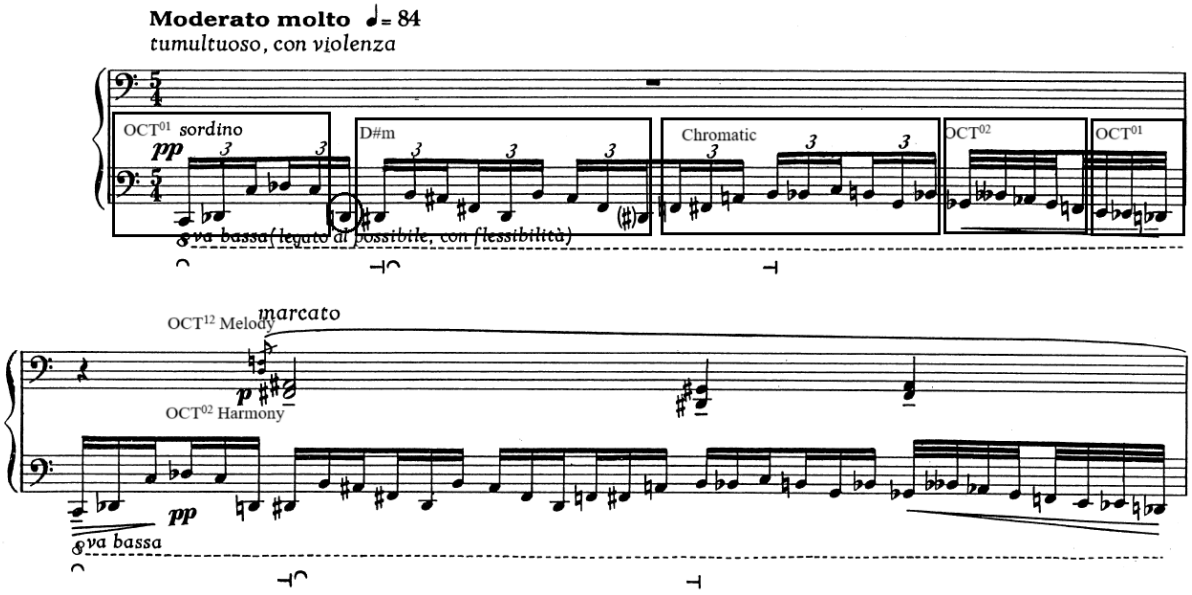
Example 26. *Ciaccona* mm. 47-48: Bitonal Tone Field



A final type of tone field to consider in *Arcana* is the chromatic tone field. Example 27 highlights a striking tone field from the beginning of the *Finale*. The chromatic density of this field creates great energy but almost no tonal function.[128] This tone field combines octatonic subsets, a diatonic triad (D-sharp minor), and free chromaticism to create an ambiguous harmonic environment. The boxes separate these harmonic regions in the tonal field. The right hand once again functions independently of the tone field and determines the music's trajectory. The chromatic tone field prolongs a feeling of buzzing restlessness as opposed to a functional harmonic tone.

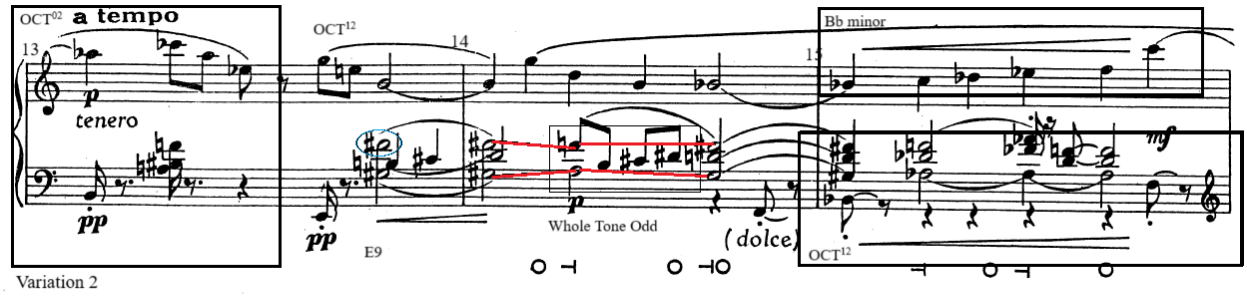
[128] De Leeuw, 83

Example 27. *Finale* mm. 1-2: Chromatic Tone Field



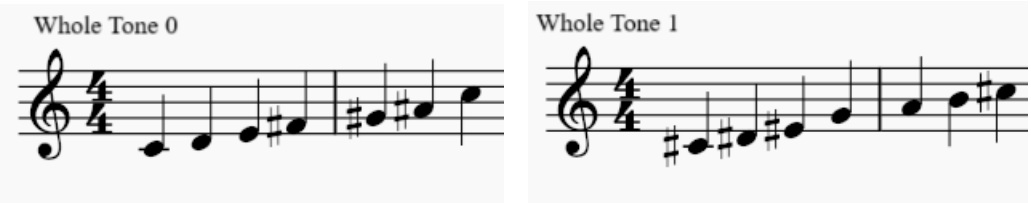
The three tone fields discussed here expand the harmonic environment of the music by introducing pitches that are not part of a unified pitch collection. The tone fields themselves represent sustained use of sonorities that exist apart from the surrounding harmonic materials. In a similar manner, Escher incorporates short segments of various pitch collections to expand his harmonic materials. Example 28 shows measures 13 through 15 of the *Ciaccona*. Here Escher expands the initial octatonic collection with whole tone elements in measure 14 and diatonic elements in measure 15. The pitch content in the first box is all from OCT^{02}. The E minor triad in measure 13 signals the transposition to OCT^{12}. The F-sharp encircled in blue at beat 5 of measure 13 does not exist in OCT^{12} and is altered chromatically to create an E major 9 chord. The G-sharp and F-sharp on the downbeat of measure 14 retract inwards to A and F. This retraction is shown with red voice-leading lines.

Example 28. *Ciaccona* mm. 13-15: Harmonic Expansion



The minor sixth on beat three of measure 14 is filled using a segment of Whole Tone Odd (WT^1), one of only two possible whole tone scale transpositions. Both transpositions are shown in Example 29. The scale is called "odd" because it contains only odd integers (C-sharp = 1, D-sharp = 3, F = 5, etc.). Measure 15 reverts to OCT^{12} in the bass while the melody is drawn from the B-flat minor scale. Because the theme contains this diatonic area originally, one could say that measure 15 is an instance of a diatonic environment that has been expanded with harmonies from OCT^{12}.

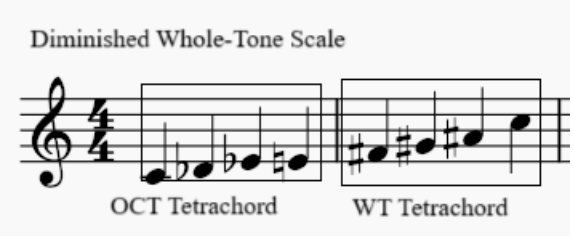
Example 29. Whole Tone Scales 0 and 1



Whole tone scales and octatonic scales have the interval of a major third in common. Escher uses this interval to create unity even though the music may change pitch collections frequently. One example of this technique is his frequent use of the "altered scale." In its most basic form, an altered scale is simply a scale or mode in which certain pitches have been chromatically changed. In his article for *Grove Music Online*, Steven Strunk says that since the

1970's the altered scale has become associated with jazz pedagogy.[129] Strunk says that these scales developed to create scalar collections that could match with chords in order to teach jazz improvisation.[130] As an example, Strunk suggests that the G dominant seven chord can be represented as a scale if its extensions through the 13th are arranged in order. This creates a G mixolydian mode that matches the G dominant seventh chord. The intervals can then be altered chromatically to fit the composer's vision. In *Arcana*, the most common altered scale is the "diminished whole-tone scale."[131] This scale combines an octatonic subset with a whole-tone subset. Example 30 shows one such scale and its octatonic and whole-tone tetrachords.

Example 30. Octatonic and Whole Tone Tetrachords in a Diminished Whole Tone Scale



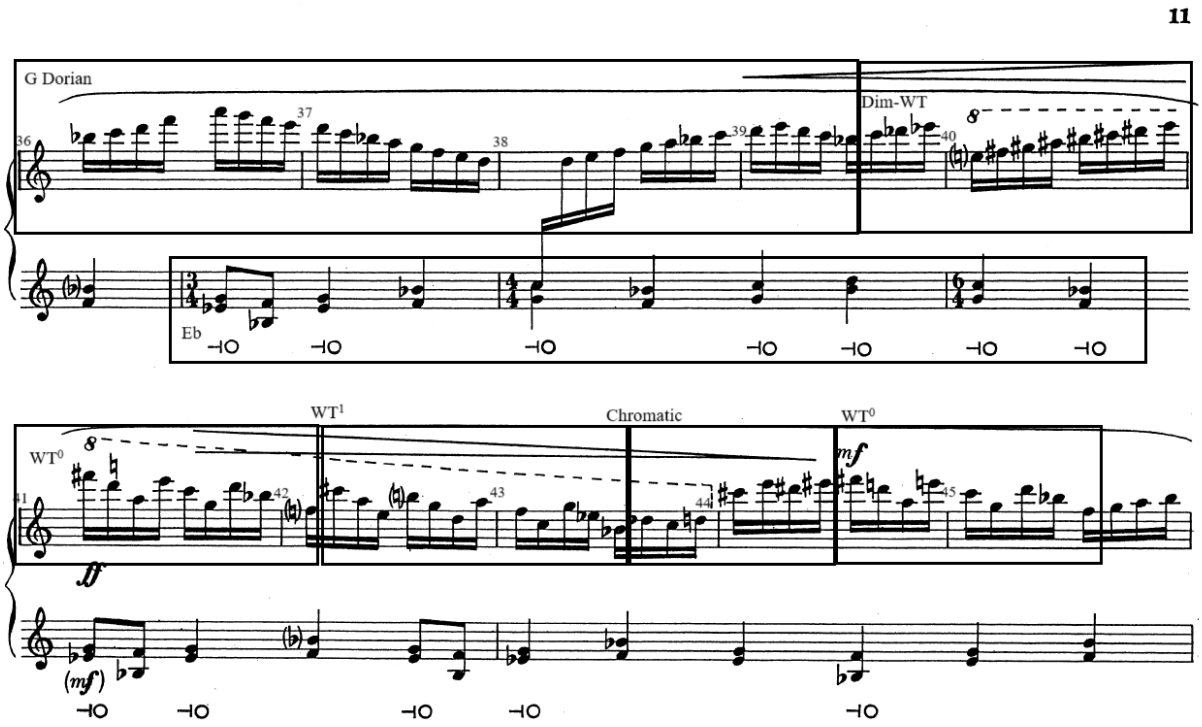
Strunk suggests that the diminished whole-tone scale can be created by altering the extensions of the G dominant seventh chord.[132] Beginning with the G dominant seven chord, Strunk adds a minor ninth, an augmented ninth, an augmented 11th, a minor thirteenth, and diminishes the fifth. This creates the scale G – A-flat – B-flat – C-flat – D-flat – E-flat – F – G in enharmonic equivalency. The segment G – A-flat – B-flat – C-flat) belongs to OCT^{12} and the segment (C-flat – D-flat – E-flat – F) is a subset of WT^{1}. As suggested by Strunk, this scale is also known as the

[129] Steven Strunk, "Altered Scale" from Grove Music Online.
[130] Ibid.
[131] A "diminished" scale is another term for octatonic scale.
[132] Strunk, "Altered Scale"

seventh mode of the melodic minor scale.[133] The above scale contains the same pitch content as A-flat ascending melodic minor but begins with the leading tone.

Escher uses the diminished whole-tone scale in two distinct ways. The first is as a source of scalar sonority that functions independently from the surrounding harmonic context. A prominent example of this occurs in the *Toccata*. Example 31 shows changing pitch collections over an E-flat centered horn call motif. Escher uses the diminished whole-tone scale here for its unique intervallic spacing as the scale sweeps into the upper reaches of the keyboard. The scale in measure 40 dovetails into WT^0 via the F-sharp that is common to both collections.

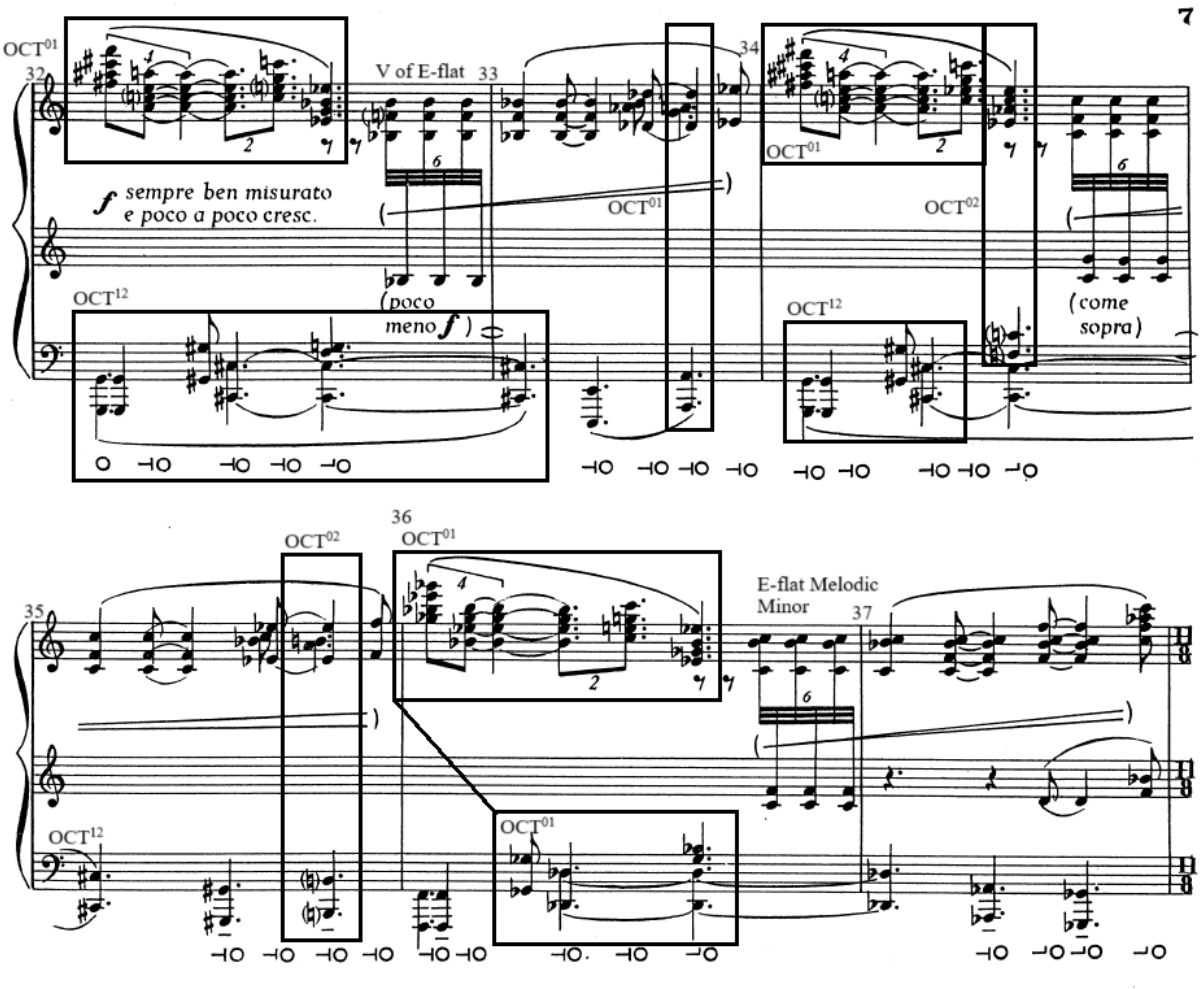
Example 31. *Toccata* mm. 36-45: The Diminished Whole-Tone Scale



[133] Strunk, "Altered Scale" from Grove Music Online

Escher also uses the diminished whole-tone scale as a source of harmonic material. The octatonic subset of the diminished whole-tone scale allows it to blend with octatonic environments. Example 32 shows measures 32 through 37 of the *Preludio*.

Example 32. *Preludio* mm. 32-37: Diminished Whole-Tone Scale (E-flat Melodic Minor)

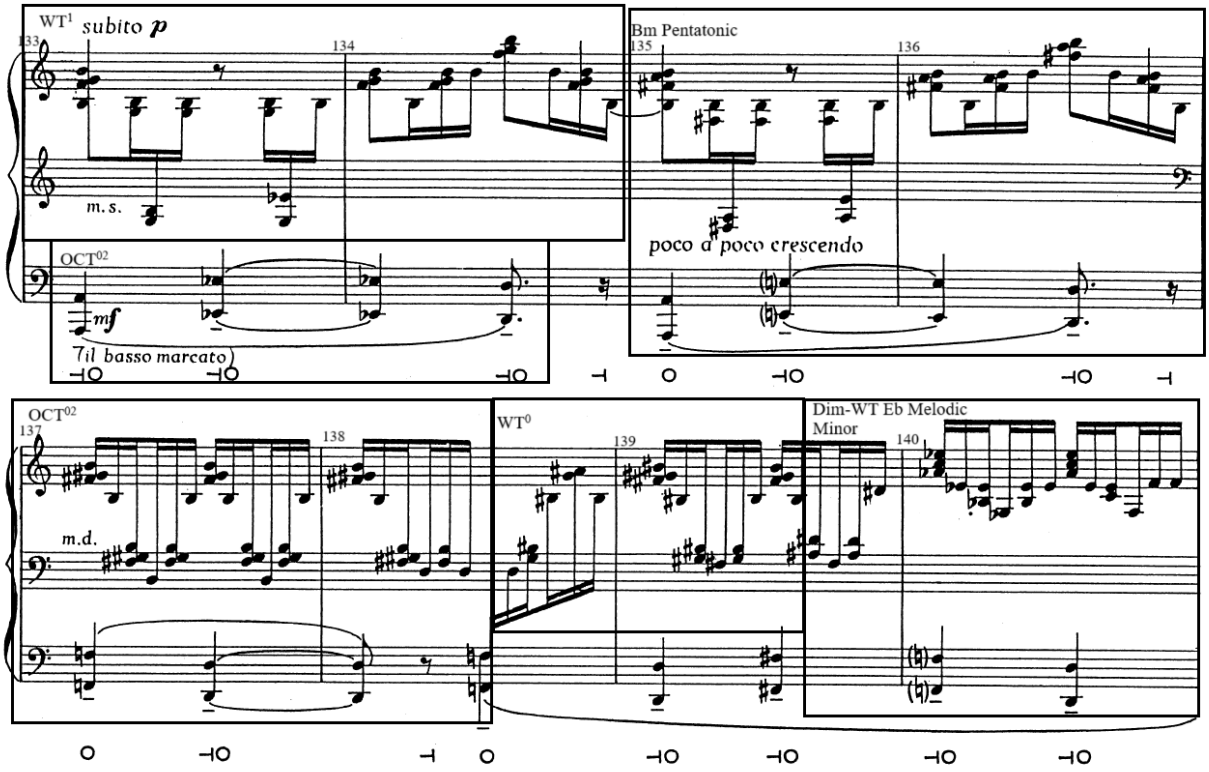


This passage uses resources from all three octatonic scales in an unstable environment that seeks to attain E-flat as its tonal center. Separate octatonic collections are boxed horizontally and labeled. Octatonic collections that are shared across staves are boxed vertically. The motive in measure 32 outlines an F-sharp fully-diminished seventh chord, harmonized with major and minor triads derived from OCT^{01}. These major sixth leaps create great energy, but if octave

equivalence is considered, the melody is F-sharp – A – C – E-flat. The fanfare sextuplet in measure 32 foreshadows an E-flat tonic by functioning as V of E-flat. Throughout this passage, E-flat emerges as the final melodic tone of each gesture, except for one moment in measure 35 where the F is a passing tone to G-flat on the downbeat of measure 36. The bass theme in measure 32 is a continuation of the earlier ground bass and begins in OCT^{12}. Though still octatonic, measure 36 is strongly centered on E-flat. Measure 37 switches to diminished whole-tone with the inclusion of the pitch D. The pitch content of measure 37 is the same as E-flat melodic minor but avoids the sounding of the pitch E-flat. E-flat becomes the clear tonic in measure 38.

Escher's music rarely rests within a single pitch collection because his harmonic practice shows a desire for continuous variation. Example 33 shows how the composer uses different collections to create harmonic variations in measures 133 through 140 of the *Finale*. The harmonic resources in this passage begin with WT^{1}, which is then expanded in turn with B minor pentatonic, OCT^{02}, WT^{0}, and diminished whole-tone scales. In addition to harmonic expansion, this example shows the interaction between the melodic material in the bass and the changing pitch collections in the right hand accompaniment. The bass theme in measure 133 is the primary theme from the *Toccata* in retrograde. This theme begins in OCT^{02} and is independent of the WT^{1} collection in the accompaniment. However, with the exception of the F-natural in measure 138, this theme is varied to match the surrounding harmonic collection. Therefore, this passage's expanded harmonic materials appear to influence the melody by altering the pitches and intervals available within each different pitch collection. Conversely, one could say that the pitch collection is adapted to match the varied theme.

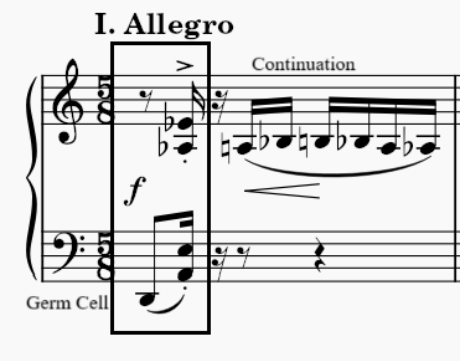
Example 33. *Finale* mm. 133-140: Harmonic Expansion



Triadic Juxtaposition and Polytonality

Escher's fluid use of various pitch collections creates a great variety of sonority within *Arcana*. As discussed, Escher prefers collections that can elide with the underlying octatonic network to create a cohesive whole. A further expansion of harmonic resources results from Escher's use of polytonal sonorities that find their genesis in octatonic scales. A common harmonic technique in *Arcana* is the juxtaposition of chords with roots separated by a certain interval that derives from intervals that occur naturally within the octatonic scale. This is reminiscent of Willem Pijper's polytonal techniques. In Pijper's music, the degree of root separation is derived from intervals within the germ cell. The germ cell in measure one of his *Piano Sonata* (1930) is shown in Example 34.

Example 34. Pijper *Piano Sonata* First Movement Germ Cell



This germ cell combines two clear perfect fifths: A-E, and A-flat-E-flat. Since the whole piece originates from intervals within the germ cell, these two perfect fifths create a polytonal sonority with a degree of separation of a half step. Theorist Hans Eduard Kooij explains Pijper's technique clearly in his article, "Composition by Use of Germ Cells."[134] Kooij argues that the germ cell in Pijper's *Piano Sonata* grows in a manner similar to botanical growth in biology.[135] In botany, a single cell contains all the genetic building blocks necessary to create a whole entity.[136] In Pijper's music, germ cells represent a particular musical idea that can be harmonic, melodic, rhythmic, or a combination of the three.[137] These cells are then varied in a form of metamorphosis that creates tight cyclic forms since all of the material grows from the original cell.[138] Subsequent motifs grow from the newly developed material to create branches of their own in an ongoing transformation of the original cell. Kooij compares this gradual transformation of musical information to the biological process of "morphogenesis" which he

[134] Hans Eduard Kooij, "Composition by Use of Germ Cells," in Tijdschrift van de Koninklijke Vereniging voor Nederlandse Muziekgeschiedenis, 2004

[135] Ibid., 119

[136] Ibid.

[137] Ibid., 120

[138] Ibid.

defines as "the gradual change of character and shape in a living organism in relation to its origin."[139]

In Pijper's *Piano Sonata*, each movement opens and closes with the germ cell. The cell also returns at important structural points that create a feeling of centricity akin to the homecoming phenomenon of a returning tonic.[140] As Kooij describes it, the germ cell contains intervals, melodic motifs, harmonic juxtapositions, rhythms, and spacings between octatonic scales that form the building blocks of the piece.[141] The germ cell in Example 34 is created from a lone D that is then followed by the juxtaposed perfect fifths on A and A-flat. The D along with the A perfect fifth would usually create a tonal environment with D as its tonic. But as Kooij points out, the accented A-flat perfect fifth destabilizes this tonal environment and creates an emphasis on bitonality.[142] Kooij goes on to suggest that this bitonality is a result of the germ cell's construction from symmetrically spaced pitches within the octatonic modes.[143] The symmetrical nature of the octatonic modes prevents any clear centricity but the author provides a clear method to determine the structure of the germ cell. Kooij first creates two octatonic scales starting on D, one with the half step at the start and one beginning with the whole step. He then aligns them vertically and boxes the pitches that match the germ cell pitches.[144] His experiment is recreated in Example 35.

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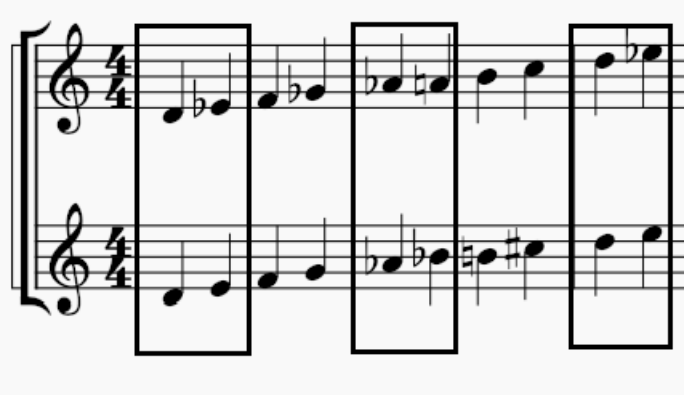
[139] Kooij, 120
[140] Ibid.
[141] Ibid.
[142] Ibid., 122
[143] Ibid.
[144] Ibid.

Example 35. Discovering the Germ Cell by Aligning Two Octatonic Scales

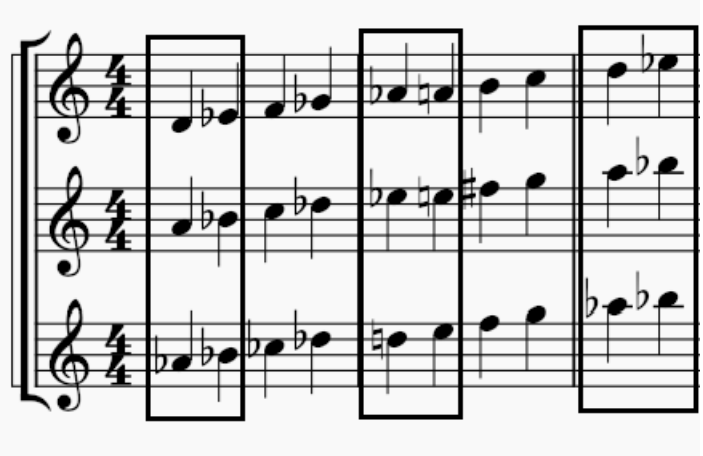


It takes two different octatonic modes to create all the pitches used within the germ cell; therefore, the germ cell creates a bitonal environment from the outset of the piece. The second box also contains a B-flat. The author states that to recreate Pijper's germ cell, he had to create a symmetrical octatonic system that included the B-flat.[145]

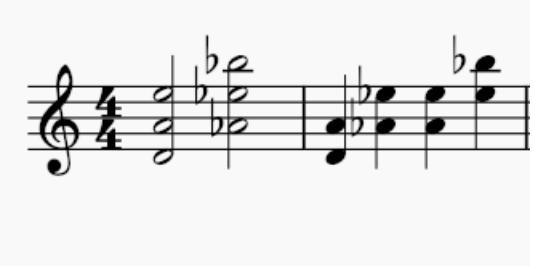
Example 36 shows the next step in Kooij's process.[146] He aligns all three octatonic modes, but this time the author begins each scale on the structural pitches from the germ cell: the D, A, and A-flat. When arranged vertically, the complete germ cell appears in the central box. Kooij then creates a germ cell prototype with all of the boxed pitches arranged in perfect fifths as in Example 37.[147]

[145] Kooij, 123
[146] Ibid.
[147] Ibid.

Example 36. Discovering the Germ Cell by Aligning All Three Octatonic Scales



Example 37. Kooij's Germ Cell Prototype



Kooij says that though the B-flat is "initially an invisible part of the germ cell, [it] suggests a resemblance to biological development processes, where an inherent but undetectable element contained within the germ cell often emerges during a later stage of growth." The B-flat is only a passing element in the initial germ cell continuation, but it is clearly present as a generative pitch throughout the work. The inclusion of the B-flat within the germ cell therefore creates a bitonal environment built on the tritonal juxtaposition of two tonics on D and A-flat.

Though Escher experimented with germ cell construction in his own *Sonata No. 1* for solo piano (1935), *Arcana* does not utilize Pijper's generative procedures in an overt way. However, the work does include some of Pijper's polytonal practices regarding harmonic juxtapositions and the creation of polytonal sonorities. These sonorities are usually composite

chords that are created by juxtaposing triads whose roots are separated by a certain interval. As defined by Ton De Leeuw, a composite chord is a chord created by juxtaposition whose parts can be separated and treated individually.[148] These composite chords do not have a tonal function in most cases because their sonorities are unstable. As a result, De Leeuw says that composite chords do not reach the level of genuine polytonality even though their components are usually independently stable triads.[149] Composite chords are a sonorous phenomenon and do not define centricity on their own. As De Leeuw points out, the gravity of the bass tends to create monotonality even in a highly extended and chromatic environment.[150] For simplicity's sake, I will refer to Escher's composite chords as polytonal entities even though the surrounding musical context rarely achieves genuine polytonality.

In *Arcana*, the minor third is the most common interval of separation in Escher's polytonal sonorities. Example 38 shows a passage from the *Preludio* which exhibits prolonged use of composite chords. Measure 43 begins this section with minor-third root motion between D-sharp minor and C. Measure 44 juxtaposes triads with roots a minor third apart (B with G-sharp major, B-flat with G major). Measures 47 through 48 combine triads with roots a major third apart (F with A minor, B with E-flat major) and triads with roots a minor second apart. Major thirds are maintained in the outer voices throughout this example regardless of root separation. The triads used are kept visually discrete though they form single combined sonorities. The repeated presence of B-flat in the upper staves functions like a pedal or bell tone, alluding to the appearance of E-flat as tonic in the measures that follow.

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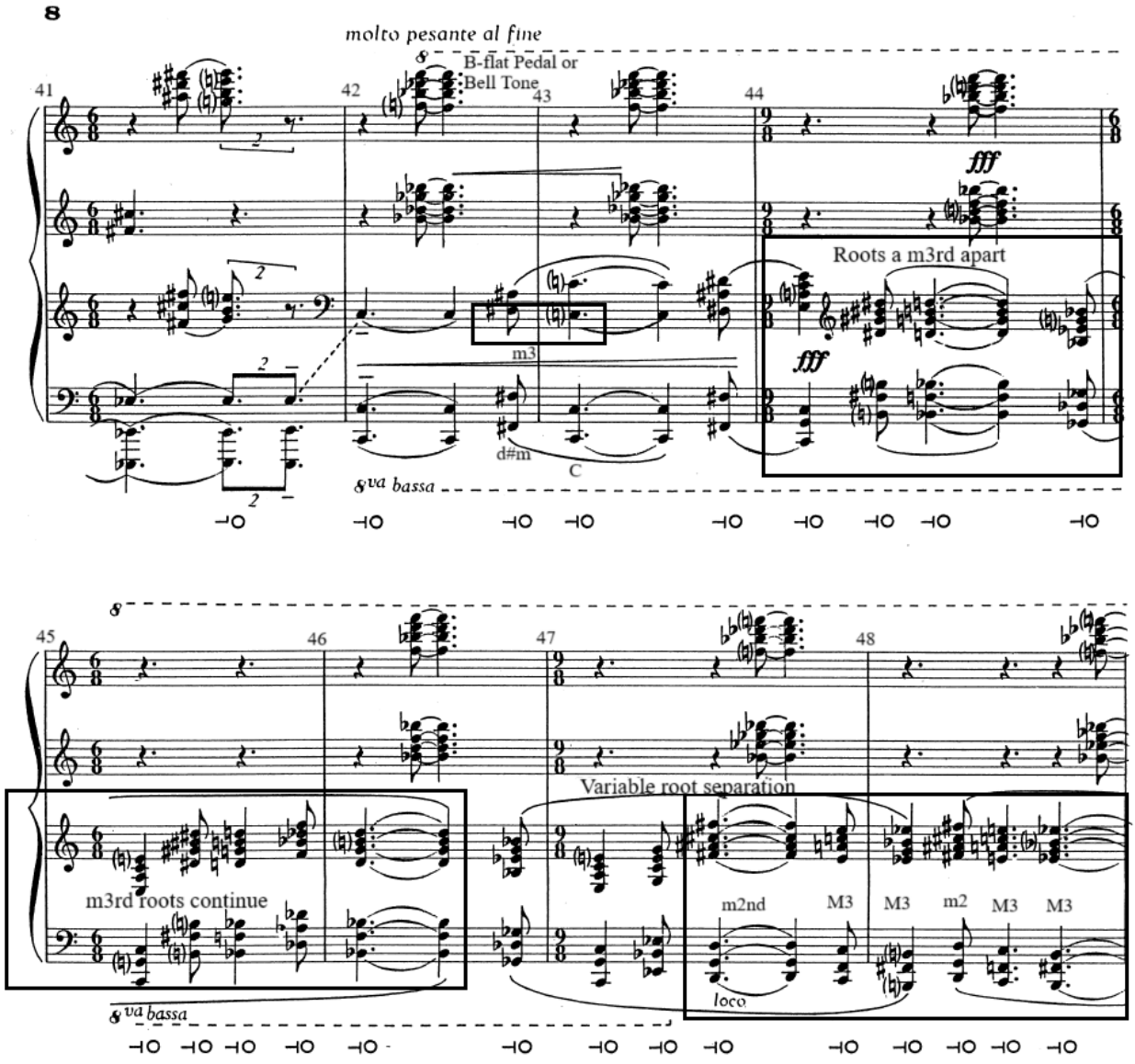
[148] De Leeuw, 87
[149] Ibid.
[150] Ibid., 86

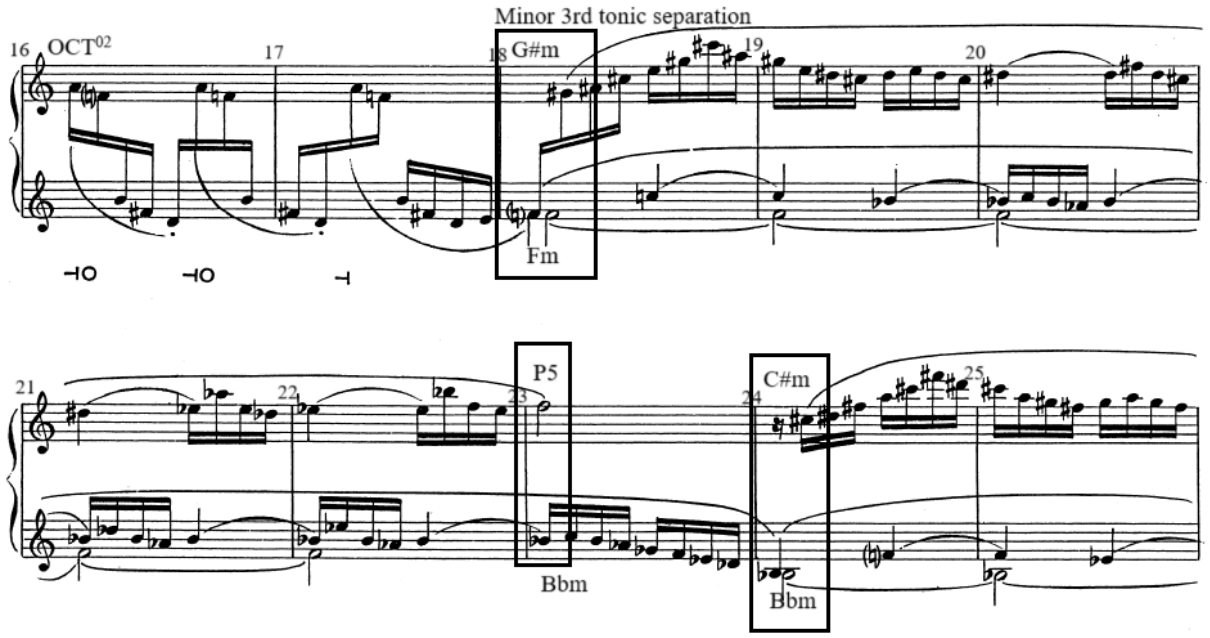
Example 38. *Preludio* mm. 43-47: Polytonal Composite Chords



Escher also expands this technique to juxtapose pitch collections with tonal centers a minor third apart. This treatment is clearly visible in the *Toccata*, where each hand adheres to a single collection. Measures 16 through 25 are shown in Example 39. This passage is visually bitonal, as the lower staff emphasizes a tonal center of F while the upper staff centers on G-sharp. This interpretation of the right hand from measure 18 to 21 takes into consideration the

pitch content of the passage and the perfect fifth span from G-sharp to its dominant, D-sharp. Another possible interpretation could include the C-natural from the lower staff in measure 18, supplying an enharmonically equivalent B-sharp. This interpretation would supply the lower leading tone to C-sharp, establishing C-sharp as the centric tone of the upper staff. This creates a major third juxtaposition between C-sharp and F. I do not hear the music this way because of the repeated D-sharps on the down beats of measure 20 and 21 but there is room for theoretical interpretation in this music. Either interpretation creates visual bitonality in the score. Despite this apparent bitonality, the combined pitch content of the two minor collections creates a scale that is close to the diminished whole-tone scale. Both collections align in the perfect fifth B-flat-F in measure 23 before the descending B-flat minor scale initiates the new tonal center of B-flat in the lower staff. The right hand enters in measure 24 on C sharp, continuing the minor third separation of the pitch collections.

Example 39. *Toccata* mm. 16-25: Minor Third Juxtaposition of Pitch Collections



The interval of separation between the roots of these juxtapositions has a great deal of influence upon the dissonance within each sonority. Measures 47 and 48 of Example 38 contain root spacings at the minor second, minor third, and major third.[151] The major-third juxtaposition, though dissonant, tends to create more stability than the minor third juxtaposition for the following reasons. An example of major third juxtaposition is the concluding chord in the lower two staves of measure 48, a combination of a B perfect fifth and E-flat major.[152] The defining major third of B Major is supplied by the E-flat in the right hand. This common tone is shared between both major chords. The B-flat in the right hand supplies the major seventh of a B major seventh chord, leaving only the G as an outlier within the composite chord. This chord could also be called a B major 7 with an added flat 6. In contrast, the minor third juxtaposition, seen in the composite chord on the downbeat of measure 46, creates more tension when combining major triads because both major and minor qualities of a single root exist simultaneously. The G major chord in the right hand is destabilized by the presence of the B flats below. The minor ninth between the top B flat in the bass and the B natural in the treble clef creates strong dissonance, requiring continuation in the music.

Because the major third juxtaposition creates more stability Escher uses it most commonly to create moments of what I refer to as "Octatonic Repose." Most of the harmony within *Arcana* is too unstable to create traditional cadences, but these moments of lessened dissonance create a cadential feeling. Measure 15 of Example 40 contains an instance of this repose. The composite chord on the downbeat of measure 15 is created from a major third

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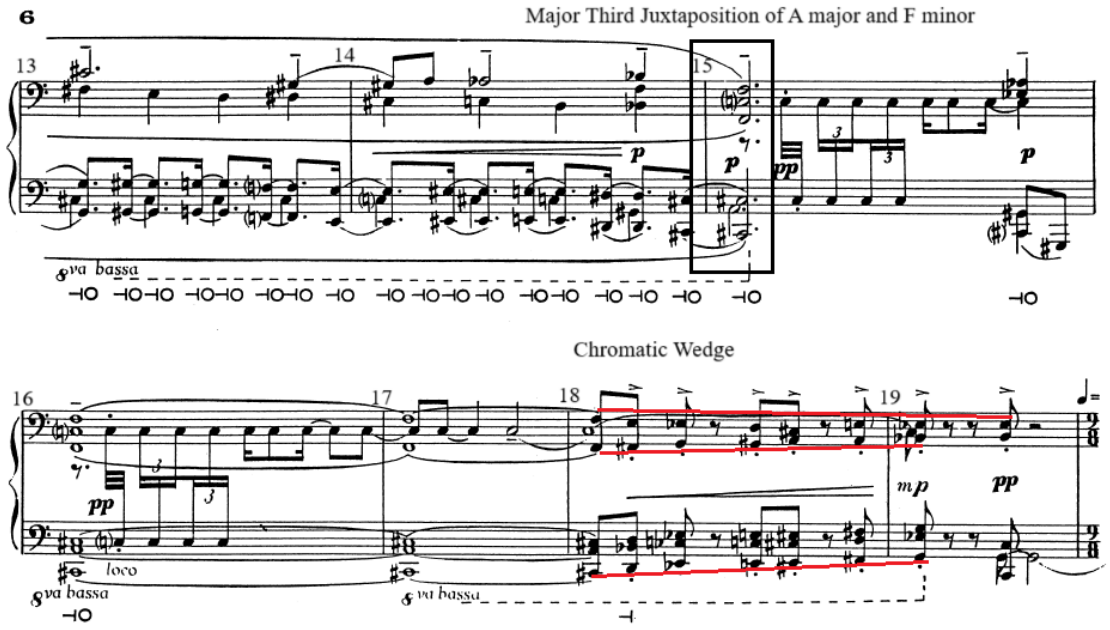
[151] A juxtaposition at the major second produces sonorities that fall within extended tonality. For example, the combination of F major and G major triads will produce a chord that extends up to the thirteenth. These chords are more common in tonal music and can be understood with traditional triadic theory.

[152] To avoid clouding the texture, Escher usually leaves out the third of chords in the left hand when playing in the lower reaches of the keyboard.

juxtaposition between F minor and A major. Escher avoids the perfect fifth from the A major triad and delays the third of the F minor triad. This avoids the dissonance between A natural and A flat while also removing the tonicizing perfect fifth of the A major chord. While the composite chord remains unstable, a feeling of comparative stasis is created after the chromatic environment of measures 13 and 14. The music loses almost all momentum until the chromatic wedge figure in measure 18 reconciles the competing tonal centers on Cm7 in measure 19.

Example 40. *Preludio* mm. 13-19: The Major Third Juxtaposition

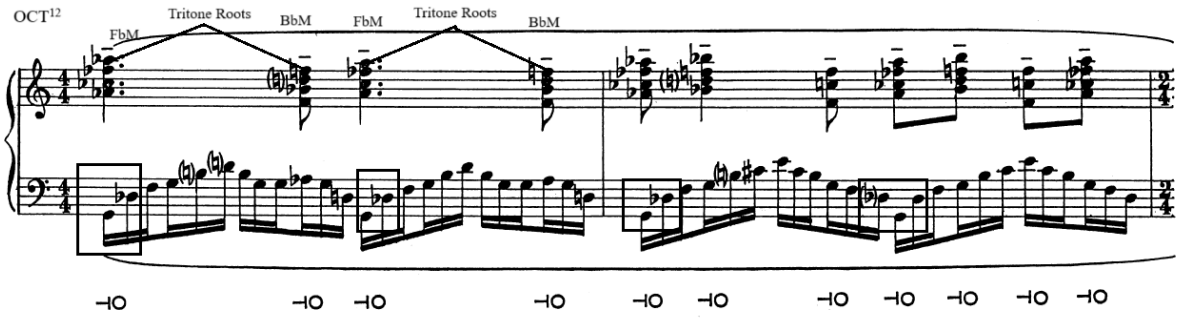


The major-third juxtaposition avoids the dissonant interval of a tritone, an interval that requires special attention. In the tonal system, this interval requires resolution to maintain functional harmony. In *Arcana*, Escher uses the tritone in two clear ways. The first is to heighten the dissonance of a particular sonority. The composite chord on the downbeat of measure 46 of Example 38 contains the tritone F and B, strengthening the dissonance of the chord. This is an instance of this technique, and tritones are present in several of the minor third juxtapositions in

this example. These tritones do not resolve in the tonal manner, but they do create a need for continuation.

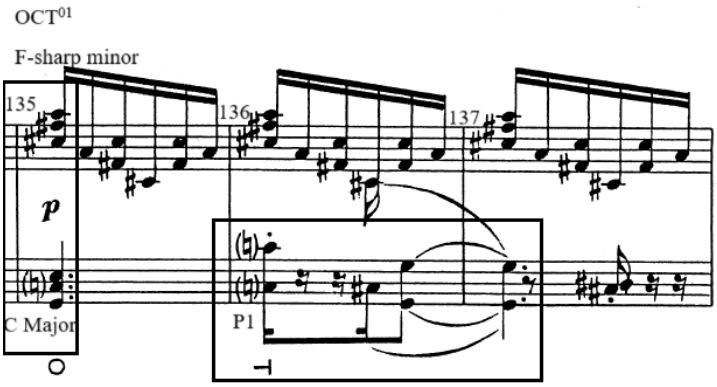
The second use of the tritone in Escher's language is as another means of triadic juxtaposition. These juxtapositions exist as a natural part of octatonic scales. In any octatonic scale, stable triads of major or minor quality can be created on every other scale degree. Returning to Example 8, stable triads can be built on the roots C, E-flat, F-sharp, and A within OCT^{01}. This creates a tritonal relationship between chords that would otherwise be unrelated in diatonic scales. A juxtaposition of triads on C and F-sharp therefore creates a composite chord that is unstable without leaving the OCT^{01} pitch collection. Tritonal pairs in octatonic scales can also share tones. If one combines a C dominant 7^{th} chord with an F-sharp dominant 7^{th} chord, they share the tritone A-sharp (B-flat) and E. These common tones create unity within the juxtaposed chord that would otherwise be foreign in traditional major and minor scales. Example 41 shows a transitional passage from measures 51 and 52 of the *Finale*. Here the tritone is used to create instability and forward momentum within OCT^{12}. The boxed pitches in the bass clef show the repeated sounding of the tritone G – D-flat. This alone urges the music forward towards a future resolution. Escher also uses chords built on the tritonal partners F-flat and B-flat in the treble clef to create further dynamic movement. These four structural pitches create a complete $G^{o}7$ chord that exists naturally within OCT^{12}.

Example 41. *Finale* mm. 51-52: Tritonal Relationships



Escher uses a similar technique in the *Toccata* to destabilize the harmonic environment within its development. Example 42 shows measures 135 through 137 of the development. The box in measure 136 outlines the primary theme (P1) which contains the tritone as a characteristic melodic interval, in this case altered with a dotted rhythm. Tritonal saturation at this point creates contrast with the comparatively stable beginning of the development in measure 128. As in Example 41, Escher uses the complete pitch content of each tritonal triad to create thick, dissonant chords that require further continuation before a resolution is achieved.

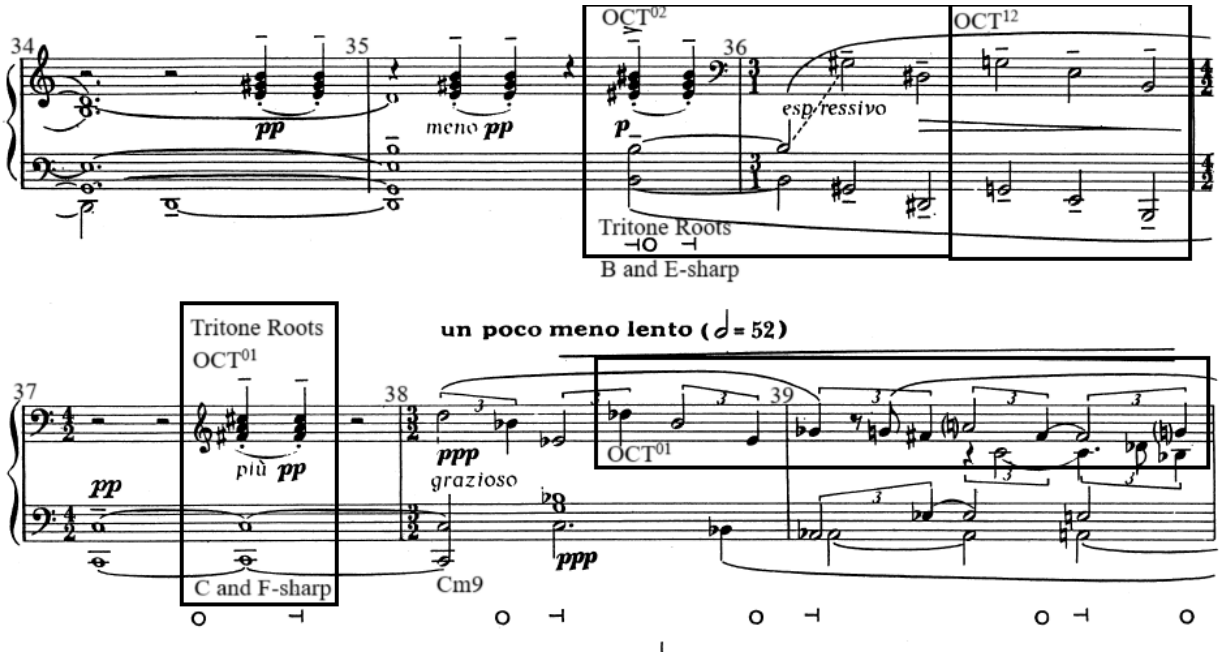
Example 42. *Toccata* mm. 135-137: Tritonal Juxtaposition



Tritonal juxtaposition is not always an agent of extreme harmonic instability and dissonance in *Arcana*. Escher occasionally thins out the texture of these juxtapositions to limit their dissonance while suggesting further continuation. Example 43 shows measures 34 through

39 of the *Ciaccona*. The D of the E minor 7 chord in measure 34 is found in the bass, lending the passage a degree of instability. The new E dominant 7 chord in measure 34 and 35 is transformed by raising its perfect fifth by a half step. This creates an E-sharp minor triad against the B in the bass, destabilizing the harmonic environment via tritonal juxtaposition. Measure 36 presents a fragment of the original theme with the final note B leading to C in measure 37. The tritonal juxtaposition of the F-sharp minor triad against this C in the bass suggests an OCT^{01} environment that influences the variation that follows. Escher uses C as its new tonic in the bass, while the treble material continues to draw primarily from OCT^{01}. The D natural on beat one of measure 38 is a result of the leading function of the C sharp in measure 37 and does not exist within OCT^{01}. This brief section therefore creates harmonic progress via the tritone without the thick, dissonant sonorities present in examples 41 and 42.

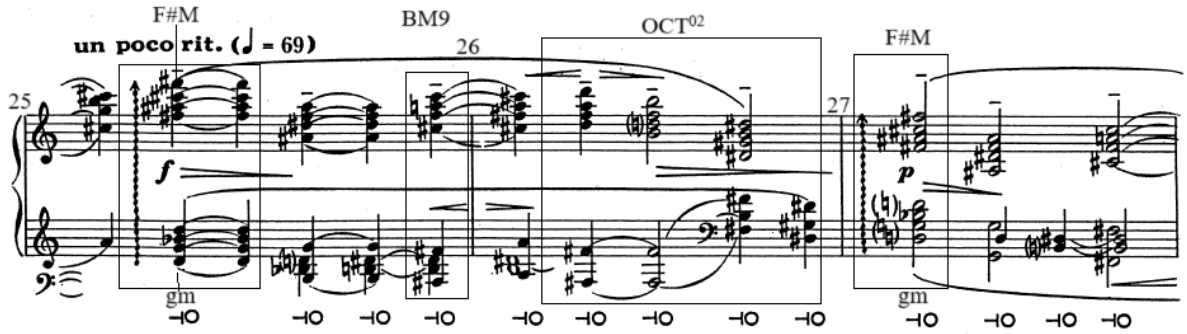
Example 43. *Ciaccona* mm. 34-39: Tritonal Juxtaposition



The Half-step Juxtaposition and Narrative Polytonality

The half-step juxtaposition occupies a special place within *Arcana*. First, it is the most stridently dissonant of Escher's composite chords. Most tones in this juxtaposition conflict with one another, and the perfect fifths of each stable triad create a bitonal structure. This juxtaposition also includes a tritone between the root of one triad and the fifth of the other; as a result, this is the most unstable of Escher's juxtapositions. The centricity of the created composite chord is ambiguous, causing conflict between the roots of each discrete triad. This conflict of centricity plays out in *Arcana* on a small and large scale. Example 44 is a micro-level example of how Escher uses the half-step juxtaposition. Measure 25 of the *Ciaccona* presents a bitonal sonority created from the half-step juxtaposition of F-sharp major and G minor triads on beat two. This dissonant combination suggests the presence of two different octatonic scales: OCT^{01} for the F-sharp major chord and OCT^{12} for G minor. The F-sharp emerges as the centric force in this example. F-sharp is the dominant of the resolution chord on B. The upper staff material stays firmly in OCT^{01} with no chromatic alterations until both systems align in OCT^{02}. The G minor chord must be chromatically altered beyond OCT^{12} to create a resolution. Escher raises the third and fifth of the G minor chord by a half step on beat five of measure 25 and lowers the root by a half step on beat six. This resolves the dissonance of the bitonal composite chord, aligning both systems on the B major ninth chord on beat six. Both systems continue through OCT^{02} before the bitonal structure returns in measure 27.

Example 44. Ciaccona mm. 25-27: Half-Step Juxtaposition



Though this is but one local instance of Escher's treatment of the half-step juxtaposition, the same conflict of centricity plays out over the course of the entire work. From the beginning of the *Preludio* to the final measure of the *Finale*, a tense battle of centricity between opposing tonal centers takes place. I call this phenomenon "Narrative Polytonality" because each tonality influences the movements of *Arcana* in a manner that is reminiscent of how themes influence the musical discourse in sonata form. In classic sonata form, the musical conflict is created by the argument between two themes that occur within two related tonalities. In major keys, this conflict is frequently represented by the tonic and its dominant. Minor-key sonata forms generally use the relative major as a foil to the tonic. In both cases, the tonic remains the primary organizational pitch center over any secondary tonalities.

In *Arcana*, the narrative is inherent in the conflict between D and E-flat as opposing tonal centers. Escher uses these tonal centers as representations of the forces of chaos and order respectively. Throughout the work, D is associated with passages that are unstable due to their octatonic organization and frequent changes in pitch collection. E-flat centered sections are more orderly in the traditional tonal manner. Escher does not associate themes with these centric tones, except for the primary theme from the *Toccata*. This theme returns as it would in a sonata form, but it returns in the movement's recapitulation on a different tonal center. A variation of this

theme appears at the end of the *Toccata*'s coda, but its pitches are reordered, and the harmonic context is different. This theme returns in retrograde during the development of the *Finale,* in a whole-tone context that distinguishes it from its original form.

As utilized by Pijper in the germ cell from his *Piano Sonata,* a half-step juxtaposition prevents clear centricity and is inherently bitonal. In the case of Escher's *Arcana,* the two competing tonal centers D and E-flat create a bitonal conflict that is fully resolved only at the end of the work. The form charts that follow show how these centric tones influence the harmonic progress of each movement. Local tonal centers are given when they are apparent. Centric tones for each section were determined based on the influence of the bass and the centric melodic tones.

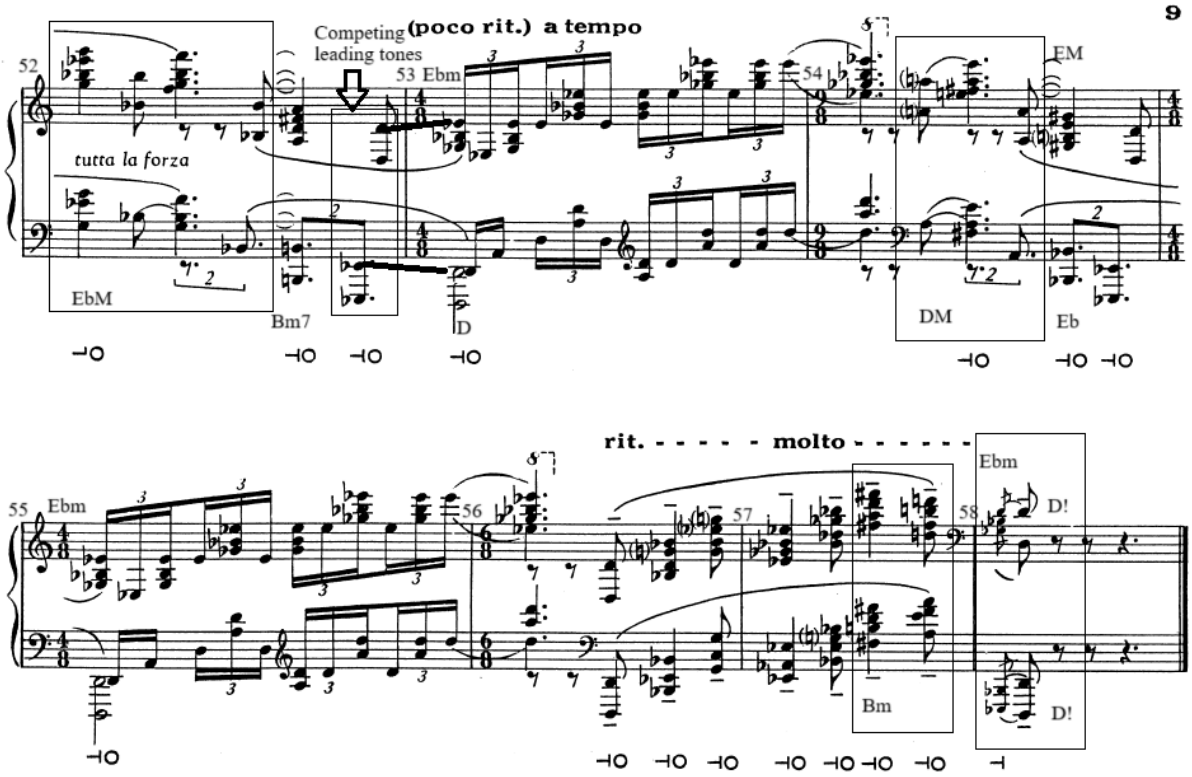
The form of the *Preludio* can be broken down into four large sections. The two A sections are improvisatory and use a repeated timpani-like rhythm that creates kinship between them. Measures 1 through 15 use centric tones that are related to D, creating the first large section of the Narrative Polytonality that organizes the movement. The chromatic wedge figure in Example 40 reconciles the competing centers of A and F-sharp on C in measure 19. The G of the C minor 7 chord is sustained, creating a new center of G, as the B section starts. Here a ground bass draws most of its pitch content from OCT^{12} until harmonic expansion destabilizes the foundational octatonic environment in measure 32. Section C begins in measure 38 with a fortissimo bass octave on E-flat, beginning the movement's E-flat-centric portion. The influence of E-flat as a tonic continues until measure 58, but its resolution is undermined by the forceful appearance of D at the last moment.

Table 1. Form Chart for Movement I: *Preludio*

Measure(s)	Form Section	Centric Tone(s)	Notable Feature(s)
1	A1	D	Introduction, improvisatory
9	A2	C-sharp	-
15	-	A/F-sharp	Octatonic repose
19	End of A2	C	-
20	B	G	Ground bass
32-37	-	Unstable	Transition, Chromatic and Octatonic
38	C	E-flat	-
42	-	C	Composite chords
47-48	-	B/E-flat	Composite chords
49	-	Alignment on B9/D-sharp (E-flat)	B9 foreshadows the appearance of Eb as tonic
52-58	Conclusion	D/E-flat	Narrative Polytonality
58	-	D	E-flat resolution avoided

Example 45 shows the conclusion of this movement, which functions as a microcosm of *Arcana*'s Narrative Polytonality. I consider it to be separate from section C because of this encapsulated centric contest. This passage emphasizes tonics on E-flat and D. Measure 52 presents each tonic's competing leading tones. E-flat serves as an upper leading tone to D in the bass while D leads to E-flat in the treble clef. Measure 53 juxtaposes E-flat minor with a D perfect fifth. D emerges as the final tonic in measure 58, but the conclusion is ambiguous. Measures 52 and 57 also show the structural importance of the B minor triad and its resolution to E-flat.

Example 45. *Preludio* mm. 52-58: Narrative Polytonality

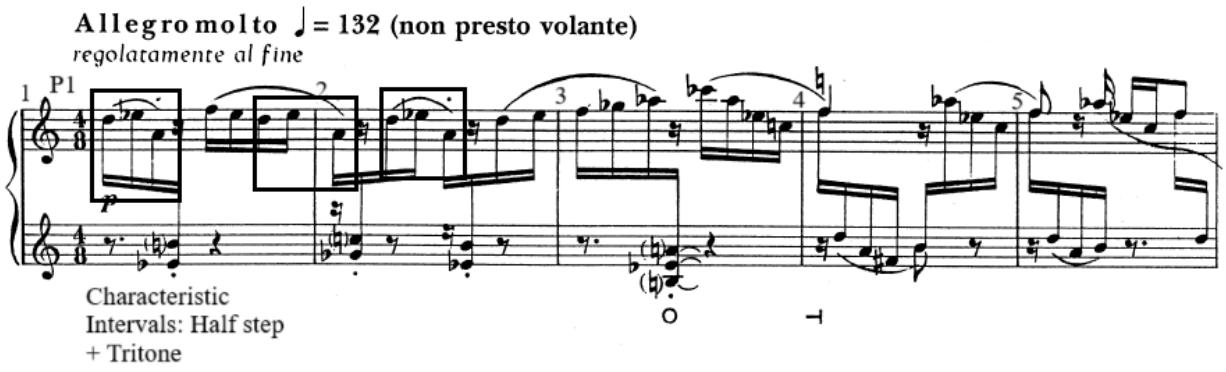


The *Toccata* can be viewed as an altered Sonata-Allegro form. The opposition of D and E-flat centricity is evident within the structure of the primary and secondary theme areas respectively. The exposition contains two distinct thematic areas though there is not a functional harmonic scheme. In general, the D-centered primary theme area is harmonically unstable and ambiguous, while the E-flat centered secondary theme area creates more-stable centricity through familiar harmonic practices.

The D-centric primary theme area contains three discrete motives. The first of these, P1, occupies measures 1- 17 and draws its pitch content from OCT^{02}. Example 46 shows this theme with its characteristic combination of half step and tritone intervals in boxes. If viewed as a vertical sonority, this is a combination of a perfect fourth (A to D) and a diminished fifth (A to

E-flat). This trichord exists naturally as part of octatonic scales, and its intervallic content is used again in the *Finale* for motivic material. P2 is a bitonal theme that juxtaposes F minor in the left hand with pitches from the G-sharp minor scale. This theme returns in the recapitulation, but with a different interval of separation between the two separate pitch collections. P3 begins with the upbeat to measure 31 and is characterized by a repeated horn call ostinato centered on E-flat in the left hand. Escher uses variable meter in the left-hand part that does not align with the meter of the right-hand part; therefore, measure numbers for P3 are derived from the right hand, which remains metrically stable.

Example 46. *Toccata* mm. 1-5: Characteristic Intervals in P1



The E-flat-centric secondary theme area begins in measure 77 with harmonic content that is more stable and familiar, and melodic content that derives directly from the harmonic environment. Harmonically, the secondary theme area uses extended tonality with octatonic subsets that color the sonorous environment. The centric tone of B-flat functions as the dominant of E-flat throughout. E-flat makes its first appearance as a tonic in measure 110. Measures 120 through 127 form a transition that destabilizes the previous E-flat section, taking the G in the E-flat major chord in measure 120 as a point of departure. The G is then repurposed as the dominant of the C-minor chord that begins the development section.

The development is harmonically unstable and contains variants of themes P1 and P3. It begins and ends in C minor, calling attention to the presence of E-flat. The conclusion of the development begins in measure 186 with the major third juxtaposition of B major and E-flat major. This composite chord combines the E-flat triad with its frequent precursor, a chord on B. The C major/minor transition leads to the recapitulation, which starts with theme P3 in measure 199, centered as before on E-flat. The rest of the recapitulation is truncated and presents the missing motivic content from P1 and P2 in different harmonic environments.

The coda begins in measure 259 and confirms D as the foundational tonic for the entire movement. P1 finally appears in its original transposition in measure 284, but the pitches are reordered (D moves down to A, then up to E flat). The Phrygian mode appears with the last four 16th notes of measure 292, indicating that the victor in the battle of centrality within the *Toccata* is D.

Table 2. Form Chart for Movement II: *Toccata*

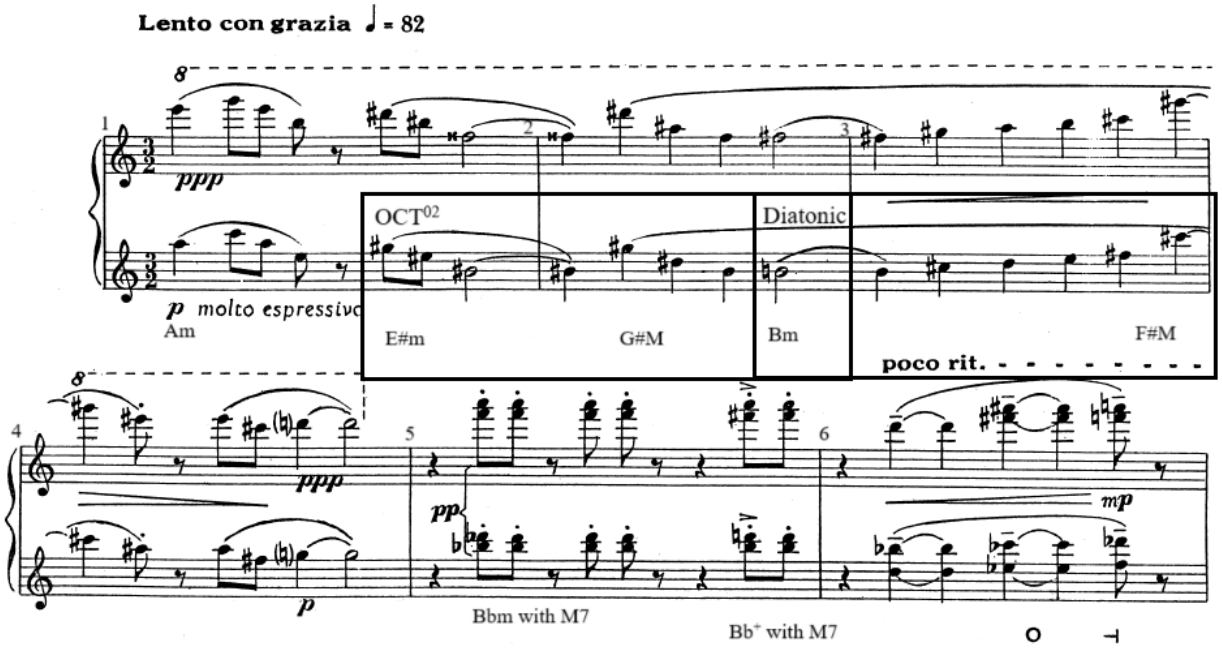
Measure(s)	Form Section	Centric Tone(s)	Notable Feature(s)
1	Exposition, Primary theme area	D	Theme P1
18	-	F/G-sharp	P2
24	-	B-flat/C-sharp	-
30-31	-	E-flat/G Dorian with variable pitch collections	P3, Horn Call Ostinato
65	-	G	P1
77	Secondary theme area	B-flat pedal	S1
104	-	-	B^7 foreshadows E-flat as tonic
105	-	E-flat/B-flat pedal	Diatonic, stable

110	-	E-flat	S2
120	-	G pedal	Transition
128	Development	C/G pedal	P1
135	-	C/F-sharp	Bitonal tritone juxtaposition
142	-	F-sharp	Transition
144	-	D-sharp	-
150	-	B-flat	-
160	-	F	P1
166	-	G-sharp/B	-
176	-	A-flat	P1
179-180	-	E/A-flat	Bitonal, P3 fragment
183	-	D-flat	-
186	-	B/E-flat	Bitonal
193	-	C/E-flat	Transition
199	Recapitulation	E-flat/G Dorian with variable pitch collections	P3 returns out of order, Horn Call
230	-	A	P1
237	-	C-sharp	P2, consonant variation
243	-	A/C-sharp	Major third juxtaposition with whole tone variation
247	-	G-sharp	Transition
250	-	C-sharp/G-sharp pedal	S2
259	Coda	Unstable	OCT^{02}
264	-	E (P1)	OCT^{12}

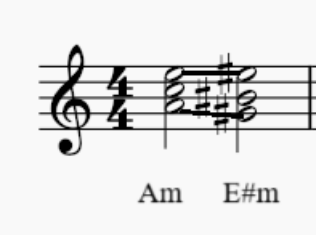
267	-	-	-
271	-	G (P1)	OCT^{12}
278	-	B-flat (P1)	OCT^{12}
280	-	D Pedal	OCT^{02}
282	-	-	Whole-tone transition
284	-	D	P1 with reordered pitches, P3 varying pitch collections
293	-	D	No third in final chord

The *Ciaccona* is based on a single melody that is repeated in many transpositions. This theme contains a stable triad, a discrete octatonic area, and a diatonic one. As shown in Example 47, the first and second triads of the theme (A minor and E-sharp minor) are related by intervallic augmentation, in which the perfect fifth of the A minor triad expands to the major sixth of the E-sharp minor triad. Example 48 shows this expansion as a harmonic reduction. An octatonic segment built from OCT^{02} follows, containing the E-sharp minor, G-sharp Major, and B minor triads. A diatonic segment concludes the theme's presentation with a B minor scale. The boxes overlap to show the modulation from OCT^{02} to the diatonic segment via the shared B minor triad. Intervallic augmentation is also evident during the continuation of the theme in measure 5 as the B-flat minor triad becomes B-flat augmented.

Example 47. *Ciaccona* mm. 1-6: Harmonic Areas in the Primary Theme



Example 48. *Ciaccona* m. 1 Harmonic Reduction: Intervallic Augmentation



Except for Variation 5, the theme's intervallic content is not altered. The nonfunctional triads within this melody provide an elementary progression that Escher uses to create harmonic variations. This is like a traditional chaconne because the repeated melody provides ample opportunity for transformation and variation. However, each new transposition of the theme is based on the harmonic progress of the previous variation, so that the end of one variation determines the beginning of the next.

As shown in the movement's form chart, Narrative Polytonality plays a role once again in determining the form of the movement. The initial statement of the theme is centered on A, the

dominant of D, while Variation 1 is centered on D. Variation 7 begins in D but is overtaken by E-flat near the end. Example 48 shows the totality of Variation 7, beginning with the D major scalar ascent in measures 53-54. This final variation is bitonal and uses unstable triads to push the music forward. It mirrors the intervallic augmentation that is apparent in the theme. Intervallic retraction, the reverse of intervallic augmentation, reconciles the variation's bitonal environment. The right-hand major thirds become minor thirds, changing the vertical sonorities from augmented triads to diminished triads in measures 55 and 56. The diatonic portion of the theme in measure 57 is centered on E-flat. Measures 58 and 59 prolong the dominant, B-flat, while the E major third above creates a tritonal juxtaposition. This major third retracts to a minor third, creating the B-flat 7 chord which leads to the tonic of E-flat in measure 62. This is the first time in *Arcana* that E-flat emerges as the foundational and concluding tonic of a movement. Like the final measures of the *Preludio*, this final variation serves as a miniature rendering of the tonal conflict between D and E-flat that influences the entire work.

Example 49. *Ciaccona* mm. 53-64: Narrative Polytonality

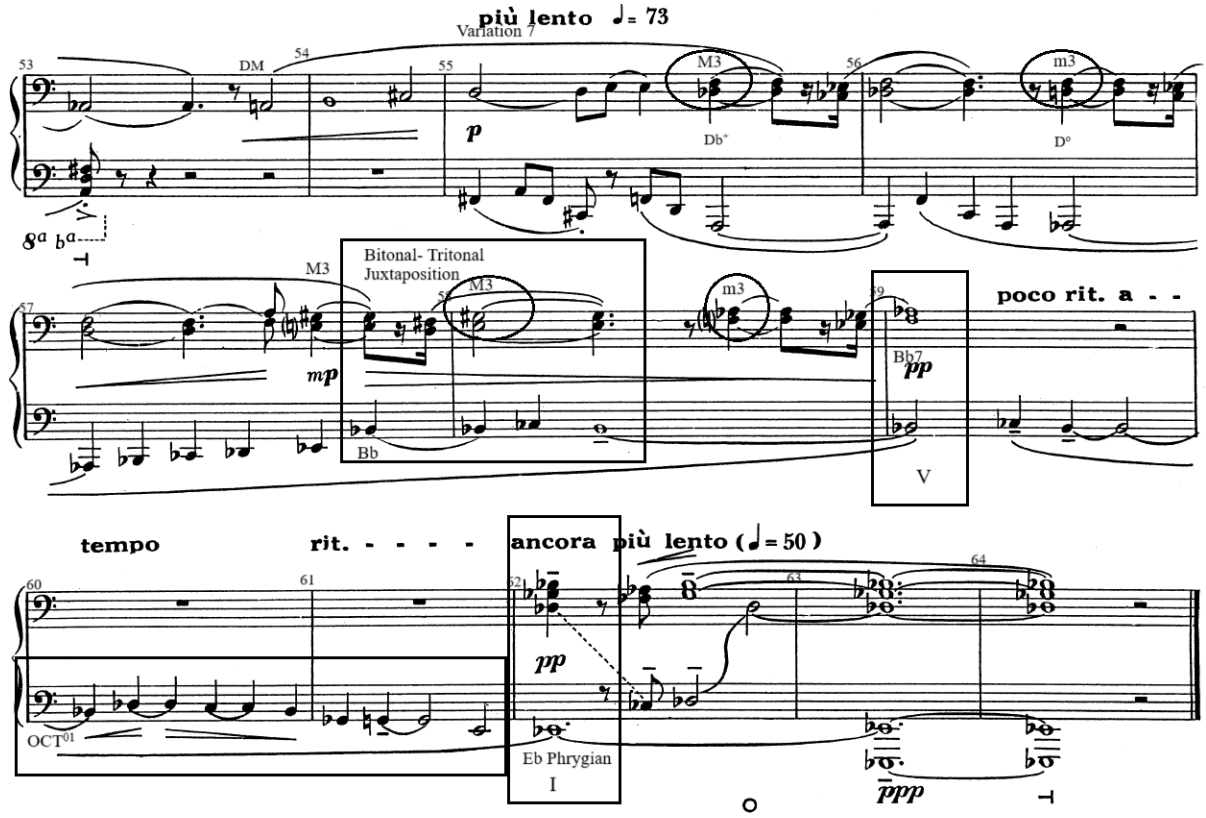


Table 3. Form Chart for Movement III: *Ciaccona*

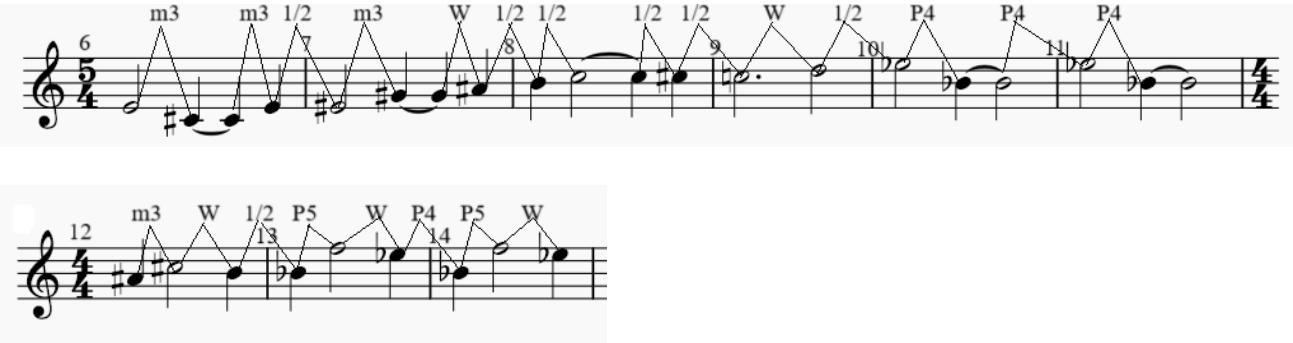
Measure	Form Section	Centric Tone(s)	Notable Feature
1	Theme	A	Right hand perfect fifth harmonization, Intervallic augmentation
7	Variation 1	D	2-voiced counterpoint, octatonic
13	Variation 2	A-flat	Unstable, harmonic expansion
20	Variation 3	C	More stable, harmonized with octatonic root progression
24	-	D/F-sharp	Octatonic Repose
25	-	G/F-sharp	Bitonal half-step juxtaposition, transition
30	Variation 4	E	Stable
36	-	-	Theme fragment transition

38	Variation 5	C	Altered theme
48	Variation 6	F-sharp (theme), B	Bitonal tone field B major/minor
50-51	-	D-flat	Phrygian root progression, transition
53-54	-	D	-
55	Variation 7	F-sharp (theme)/D	Narrative Polytonality, Intervallic retraction
59	-	B-flat	B-flat^7 appears as V of E-flat
62	-	E-flat	The first time a movement concludes in E-flat in *Arcana*

The *Finale* resolves the tonal conflict between D and E-flat that has influenced the narrative of *Arcana* since the *Preludio*. The appearance of E-flat as a tonal center in each movement heralds the coming of stability. The climax of the *Finale* is the strongest of these, firmly concluding the work with an overwhelming explosion of sound firmly in E-flat major.

The form of the *Finale* resembles a sonata form, with a few exceptions. The exposition does not present themes for the purposes of later development; rather, Escher creates larger melodic units by chaining together minor thirds as visible in Example 50. He uses intervallic augmentation to increase the intervallic content of a melody slowly over longer spans of time. Example 50 shows this technique in measures 6 through 14. The intervals of the melody slowly expand from minor thirds to perfect fifths.

Example 50. Finale Mm. 6-14: Intervallic Augmentation



The influence of Narrative Polytonality is visible in two clear ways in the exposition. The first concrete cadence occurs in measure 18 with the arrival of E-flat as tonic. Measures 16 and 17 prolong B-flat as the dominant of E-flat, creating one of the strongest tonal cadences in the entire work. The arrival on E-flat is minimally undermined by the presence of C within the chord, but one can hear this as an added tone and not as the root. The tonic of D is also present in the exposition, but as in the previous three movements, it represents an area of harmonic instability. Measure 41 begins as a moment of respite firmly within D major. This stability is immediately disrupted by chromaticism in measure 42, before a rapid intensification toward the development.

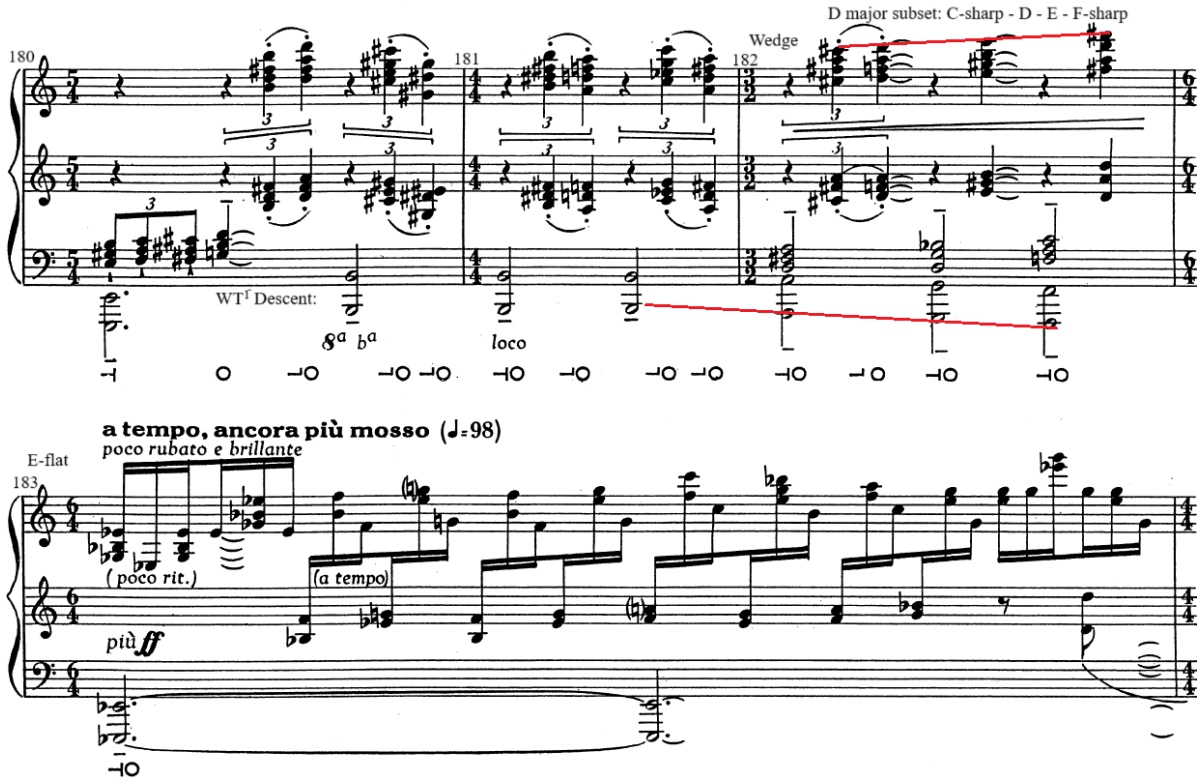
The development section is built upon the recurrence of small motivic cells created from minor thirds. This obsessive replication of identical intervallic units conveys a psychological feeling of struggle as the music continues to intensify. The largest area of Narrative Polytonality begins in measure 113, where both tonalities are present as a vertical sonority. The music that follows from measure 117 to 130 is mostly centered on D, but E-flat continually interrupts this centricity.

The only theme of note that returns in the development is the theme P1 from the *Toccata* in measure 133. This thematic entrance marks the final appearance of D as a tonal center in

Arcana. The last appearance of D's influence occurs in measure 149 where the theme appears in its original pitch order, but centered on A. This iteration of P1 from the *Toccata* strongly projects the dominant of D. Next, the cadenza in measure 156 destabilizes centricity and concludes with a sudden arrival on F-sharp major. Though the conclusion of the development sounds highly unstable, the passage is fundamentally structured by a D#º7 chord. The pitches of this chord, A, C, D-sharp, and F-sharp, provide the centric tones from measure 149 to 157, thereby structuring the passage using pitches from an unstable vertical sonority.

The recapitulation that begins in measure 158 is a false recapitulation. It reuses measure 1 and measures 4 through 15 only. It does not reprise the second theme area but rather enters a long and complex coda instead. The coda is relatively consonant compared to the exposition and development. Measure 170 through 173 prolong B major, the chord that frequently foreshadows E-flat as tonic in *Arcana*. Measure 174 follows a descending chromatic bass line that initiates the center of A-flat in measure 175. A-flat is confirmed in measure 175 by its dominant, E-flat, but measure 176 ends with C major. This C major chord functions as V of F, one of the competing centers in the composite chord F/E in measure 177. F is then repurposed as an upper leading tone to E which becomes the guiding tonic through measure 182. The final push to E-flat is shown in Example 51. Beginning in measure 180, the bass descends through WT^1. The upper voices in 182 ascend through triads built on a D major subset (C-sharp, D, E, F-sharp), creating a diverging, linear wedge with the bass (shown in red voice leading lines). E-flat is finally attained as tonic via the leading function of the leading tone D and it's major third F-sharp in the treble, and F in the bass.

Example 51. *Finale* mm. 180-183: Final Attainment of E-flat as Tonic



The climax on E-flat in measure 183 comes as a moment of great catharsis in which the psychic war of the two competing tonalities finally ends. Whole tone sonorities in measure 184 and 187 evoke ringing bells. E-flat major is projected so forcefully from measure 189 to the end that there can be no doubt about the victor in the contest of Narrative Polytonality. This moment of absolute clarity and stability is the heart of *Arcana*. At no other time in this music does a single tonality stand unimpeded by competing centric forces. This purely E-flat conclusion stands as a testament to Escher's ethos: Though the harmonic language of *Arcana* is dissonant, and its music's accumulation of tension is relentless, out of great disorder comes stability and peace. This is Rudolf Escher's creative response to a world filled with destruction and chaos.

Table 4. Form Chart for Movement IV: *Finale*

Measure(s)	Form Section	Centric Tone(s)	Notable Feature(s)
1	P1	Chromatic, C/D-sharp	Unstable, chromatic tone field
6		C then C-sharp	More stable, intervallic augmentation in melody
15	Transition		Minor thirds create melody
16		B-flat	Prolongation of B-flat as V of E-flat
17		B	B minor voice leading to E-flat
18		E-flat	E-flat (E-flat plus 6) arrival
19	P2	C	OCT^{01}
25		E	
26	Transition	E	Unstable but confirms E as center
31	S1	E	E major/minor
34		C-sharp	Whole tone and octatonic
37-38		C-sharp, C, B	
39		D-sharp	
41		D	Brief stability undermined by chromaticism
46		D-flat	
50		A-flat	OCT^{02}
51	Transition	G	Tritonal juxtaposition
54	Development introduction	A/C then B-flat pedal	Minor third voice leading from C# to Bb, martial character
60	Development	B-flat (motive), E	Frequent pitch collection shifts, irregular meter

68		B-flat pedal, F (P1)	P1 fragment from *Toccata*
72		E/B-flat	Tritonal juxtaposition
75		G/C-sharp	Tritonal juxtaposition
77		B	
81		G	
83		B	
85		G-sharp	Systems align on G-sharp
91		F-sharp/F	Half step juxtaposition
98		G-sharp/E-flat	
101		B-flat/D-flat	Minor 3rd juxtaposition
103		B-flat/E	Tritonal juxtaposition
105		C-sharp	
109		C-sharp/E	Minor third juxtaposition
110		A/F	Major third juxtaposition
112		C-sharp/B-flat then G	Minor third and tritonal juxtaposition
113		D/E-flat	Half step juxtaposition, P1from the *Toccata* variant in left hand
117		D	Narrative polytonality
123		E-flat	E-flat interrupts D centricity
126		D	
130		E-flat	E-flat interrupts again
133	Development climax	D (P1)	P1 from *Toccata* appears in retrograde, harmonic expansion
149		A (P1)	P1 from the *Toccata* centered on A, harmonic expansion
156-157		C/D-sharp, sudden arrival on	Bitonal cadenza (minor third juxtaposition of C major/D-sharp minor)

		F-sharp in m. 157	
158	False recapitulation of measure 1, followed by mm. 4-15	Chromatic, C/D-sharp	
170	Coda	B	Prolongation of B that foreshadows E-flat
174		B, B-flat, A	Chromatic bass step progression
175		A-flat, ends with E-flat functioning as V	Major third juxtaposition of A-flat/C
176		A-flat, ends with C as V of F	
177-178		F/E	Half step juxtaposition, E is the primary tonic
181-182		B	Whole tone bass progression (B, A, G, F), linear wedge in 182
183	Climax	E-flat	E-flat Major emerges from E-flat minor on downbeat, harmonically expanded with bell-like whole tone major thirds
189		E-flat	Polytonal narrative conflict resolved resolutely

CHAPTER III: SOUNDING WELL

The task of this research was to discover the fundamental elements that created Rudolf Escher's harmonic vocabulary in *Arcana*. The primary questions that guided this research were as follows:

1. What were the stylistic and philosophical influences that shaped Escher's musical language?
2. What harmonic elements organize and unify *Arcana*?

My research shows that Escher's musical language was directly influenced by the burgeoning movement for musical independence in The Netherlands around the turn of the twentieth century. This movement, spearheaded by his teacher Willem Pijper, encouraged Escher to turn from the subjectivity of the late-German Romantic school toward a more-objective and French-oriented aesthetic. Escher's objectivity is apparent in his music as a preference for ethos over pathetic expression. *Arcana*'s harmonic language shows that the composer was interested in conveying objective musical thoughts regarding the events of World War II, and not subjective emotional responses to that conflict. Escher was also deeply concerned with communicating his ethos clearly, and adopted a harmonic language that was both contemporary and understandable.

My analysis shows that Escher's harmonic vocabulary in *Arcana* is built on a foundation of octatonic scales. The harmonic possibilities of the underlying octatonic framework are expanded and colored by outside pitch collections that include diatonic, modal, and whole-tone scales. Escher creates unity among these pitch collections by combining them based on their shared intervallic properties. Additionally, the music is woven together with techniques of tonal prolongation that can be found in the standard repertoire.

My analysis also shows that Escher's composite chords and harmonic juxtapositions are created from intervals within the octatonic scale. This is an influence of Pijper's Germ Cell theory and its use of spacings between different octatonic scales. The most important triadic combination within this music is the half-step juxtaposition because it creates the Narrative Polytonality conflict that influences the discourse of the music and organizes the structure of the entire work around the pitch centers of D and E-flat.

This study is concentrated on Escher's harmonic vocabulary with particular interest in pitch collections and harmonic materials. It does not investigate Escher's melodic style outside of the context of intervallic augmentation. A separate inquiry into the melodic organization of *Arcana* will deepen our understanding of this music. Further investigation of possible germ cell influences within the work may also prove fruitful, but I was unable to identify any of Pijper's generative procedures that go beyond harmonic juxtapositions. Additional research into Escher's complete works is required for a more-complete account of his compositional language.

Finally, most sources that discuss Rudolf Escher at length remain available only in Dutch. Though translation tools are helpful, dissemination of this music will require further studies in other languages. This will develop an interest in this neglected repertoire and inspire others to study and perform this music.

A convincing performance of *Arcana* must include comprehension both of the construction of the music and of Escher's ethical commitment to objective expression. Insight into the octatonic theories discussed in this study will allow the performer to convey the formal organization of the work clearly. Preparatory aspects like memorization and technical execution will also be enhanced if one can recognize the interactions between the various pitch collections in the music. Escher's harmonic language in *Arcana* highlights the conflict within the work by

setting unrelated triads and pitch collections against one another. For Escher, the phenomenon of Narrative Polytonality is the most important of these juxtapositions because it represents the heart of the composer's ethos. The performer must reveal the conflict between D and E-flat by presenting the two competing tonics as oppositional forces whose contest determines the progression of the music's discourse. By presenting this conflict objectively, the performer can communicate the truth of the work: conflict is a pervasive part of the human experience, but there is always hope. Escher's belief in the creativity of the human spirit manifests itself in the triumph of order over chaos, just as the music leads inevitably to the victory of E-flat over D. Though the music carries a weight and seriousness commensurate with its war era creation, Escher carefully avoids subjective extra-musical connotations. The performer must find balance between the composer's committed objectivity and their own subjective pathos to prevent exaggeration and overly affected execution. This will align the performance with Escher's ethical commitment to sounding well, and the audience will listen well in return.

REFERENCES

Antcliffe, Herbert, "Herbert Antcliffe Manuscripts, c.1899-1961." University of Sheffield Library. B 200 MS 45-49; MS 227

Description of 'Antcliffe, Herbert, Herbert Antcliffe Manuscripts, c.1899-1961. University of Sheffield Library. GB 200 MS 45-49; MS 227' on the Archives Hub website, http://archiveshub.jisc.ac.uk/data/gb200-ms45-49;ms227

Antcliffe, Herbert. "The Musical Mentality of Holland." *The Musical Quarterly* 12, no. 4 (1926):602–13. http://www.jstor.org/stable/738342.

Broeckk, Jan L. (Jr.), Frederick Goldbeck, Guido M. Gatti, Walter H. Rubsamen, Richard F. Goldman, and Henry Cowell. "Current Chronicle." *The Musical Quarterly* 35, no. 4 (1949): 609–37. http://www.jstor.org/stable/739881.

Burge, David. *Twentieth-Century Piano Music*. Lanham, Maryland: Scarecrow Press, Inc., 2004.

Debussy, Claude. "La cathédrale engloutie." From *Preludes* Book I (1910). Munich: G. Henle Verlag, 1986.

Dubins, Jerry. "Getting into Dutch… Music, That Is: A Conversation with Cellist Doris Hochscheid and Pianist Frans van Ruth." In *Fanfare*, edited by Joel Bruce Flegler, 106-10. Tenafly, New Jersey: Joel Bruce Flegler, 2010.

Escher, Beatrijs. "Rudolf Escher: Het Ouvre" (Rudolf Escher: The Ouvre). Royal Society for Dutch Music, 1998.

Escher, Rudolf. *Arcana* (1944). Amsterdam: Donemus, 1994.

Hoogerwerf, Frank W. "Willem Pijper's French Aesthetic." *Tijdschrift van de Vereniging Voor Nederlandse Muziekgeschiedenis* 28, No. 2 (1978): 61–80. https://doi.org/10.2307/939041.

Kooij, Hans Eduard, "Composition by Use of Germ Cells," in Tijdschrift van de Koninklijke Vereniging voor Nederlandse Muziekgeschiedenis, Deel 54, No. 2 (2004): 119-131

De Leeuw, Ton, and Rokus De Groot. *Music of the Twentieth Century: A Study of Its Elements and Structure*. Amsterdam University Press, 2005.

Pijper, Willem. *Sonata for Piano* (1930). Amsterdam: Donemus, cop. 1964.

Ringer, Alexander L. "Willem Pijper and the 'Netherlands School' of the 20th Century." *The Musical Quarterly* 41, no. 4 (1955): 427–45. http://www.jstor.org/stable/739969.

Samama, Leo. “Nederlandse Muziek in de 20-ste Eeuw” (Dutch Music in the 20th Century). Amsterdam University Press, Salomé, Amsterdam, 2006.

Samama, Leo, and Dominy Clements. “On Composing.” In *The Meaning of Music*, 135–46. Amsterdam University Press, 2016. https://doi.org/10.2307/j.ctt1b9x1ts.18.

Samama, Leo, and Dominy Clements. “The Conductor.” In *The Meaning of Music*, 159–71. Amsterdam University Press, 2016. https://doi.org/10.2307/j.ctt1b9x1ts.21.

Samama, Leo, and Dominy Clements. “Hearing, Listening and Remembering.” In *The Meaning of Music*, 131–34. Amsterdam University Press, 2016. https://doi.org/10.2307/j.ctt1b9x1ts.17.

Samama, Leo, and Dominy Clements. “What Is Music?” In *The Meaning of Music*, 27–31. Amsterdam University Press, 2016. https://doi.org/10.2307/j.ctt1b9x1ts.5.

Strunk, Steven. “Altered Scale.” From *Grove Music Online*.

Wouters, Jos. “Dutch Music in the 20th Century.” *The Musical Quarterly* 51, no. 1 (1965): 97–110. http://www.jstor.org/stable/740893.