

The string quartets of Roelof Willem Temmingh: Style, Technique, and Performance considerations.

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Declaration

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ABSTRACT

In recent years, there has been a growing awareness surrounding South African composers and their representation in South African concert venues. Oftentimes, there is limited knowledge available about these composers, their style, and their music, which provides interesting opportunities for new research. One such example is Roelof Temmingh, who during his life greatly contributed as composer and pedagogue to South African music education. Although he only composed two works for string quartet (*Prelude en Fuga*, and *Strykkwartet no.1*), these works form part of the South African string quartet repertoire and should be accessible for scholarly and academic consumption.

Considering these factors, this study focuses on broad, initial, analytical exploration of these two string quartets, while taking into consideration aspects of style, compositional technique, and performance interpretation. The main motivation for this study is therefore not to provide a comprehensive account of form, harmony, or voice-leading, but rather to open up new avenues of explorative research in South African music, and specifically South African string quartet music. This study employs a number of analytical methodologies, as well as action-research protocols, to produce its findings.

The thesis is divided into five chapters. The first chapter serves as a contextual introduction to the study, stating the purpose, literature overview and methodological framework. Following that, the thesis consolidates existing biographic and music-stylistic research about the composer, provides analytical notes about the two works in question, unfolds general observations about style, and finally explores performance considerations within the works. Editorial comments and suggestions on the two string quartets are presented and attached as appendices.

OPSOMMING

Suid-Afrikaanse komponiste, en hoe hulle verteenwoordig word, geniet in afgelope jare ‘n groeiende aandag en bewustheid. Telkemaal is bestaande inligting beperk en moeilik om te bekom, veral in terme van styl en komposisionele uitsette. Hierdie gaping skep geleenthede vir nuwe, interessante navorsing. Een so ‘n voorbeeld is Roelof Willem Temmingh, wie gedurende sy leeftyd groot bydraes gelewer het as komponis en pedagoog in Suid-Afrika. Alhoewel hy slegs twee werke vir strykkwartet geskryf het (*Prelude en Fuga*, en *Strykkwartet No. 1*), vorm hierdie werke ‘n deel van Suid-Afrikaanse strykkwartet repertorium en sodoende behoort dit toeganklik te wees vir akademiese en kreatiewe gebruik.

Inaggenome hierdie faktore, het die studie gefokus op ‘n breë inleidende analitiese verkenning van hierdie twee strykkwartette, met ‘n fokus op aspekte soos styl, komposisionele tegniek, en uitvoer interpretasie. Die hoof motiveerder vir die studie is dus nie om ‘n deeglike berekening van vorm, harmonie, of stemleiding te gee nie, maar eerder om nuwe navorsingskanale in Suid-Afrikaanse musieknavorsing oop te maak. Die studie betrek ‘n verskeidenheid analitiese metodes, sowel as aksienavorsing protokol, om bevindinge te skep en dokumenteer.

Die tesis is georganiseer in 5 hoofstukke: 1) verskaf ‘n kontekstuele inleiding, agtergrond, literatuuroorsig, en metodologiese raamwerk; 2) konsolideer bestaande biografiese en stylistiese navorsing met betrekking tot Temmingh en sy werke; 3) verskaf analitiese notas oor die twee strykkwartette; 4) skep algemene observasies oor styl; en 5) is ‘n verkenning van uitvoerings-verwante oorwegings, en ‘n algemene refleksie as gevolgtrekking. Redaksie notas word ingesluit, en gravering van die strykkwartette word aangeheg as addendum.

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Score Availability:

Please contact the researcher, Mr C. Williams for the performance score/parts.

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1. INTRODUCTION AND METHODOLOGY

1.1. Background

During my studies as an undergraduate student at Stellenbosch University, the curricula in practical and theoretical modules almost exclusively consisted of European Art Music of the common practice period; it was only in a third-year theory module that I was formally introduced to the music of some South African composers. Here is where I first experienced the works of Roelof Willem Temmingh (1964-2012), who is commonly viewed, and is still referred to by scholars, as a leading South African composer of his generation (Lüdemann, 1987:168; Viljoen & Viljoen, 2009:52; Franke, 2011:10). However, compared to some other South African composers like Arnold van Wyk, little of his music has undergone scholarly investigation.

Martens (2017) and Kraynauw (1994:ix-x) provides a concise timeline that highlights Temmingh's contemporaries; this helps to contextualise Temmingh within a specific generation of South African composers. Martens uses the year of birth to create a distinction between the generations: 1900 to 1929 (titled the early years) refer to the generation of Priaulx Rainier, Arnold van Wyk and Hubert du Plessis; 1930 to 1959 produced Graham Newcater, Peter Klatzow, Jeanne Zaidel-Rudolph and Roelof Temmingh; 1960 to 1979 produced Paul Hanmer, Mokale Koapeng and Musa Nkuna (Martens, 2017:36-73).

After my performance of *Drie Sonette*¹ (completed in 1988), which won the Helgaard Steyn prize in 1990, his stylistic aesthetic resonated with me. This composition, symbolises South African achievement and offers alternative literature to the predominant Western Art. It took more than the usual effort to realise because the music only existed in manuscript form, and the lack of additional research to aid performance practice heavily influenced the performance. Investigating Temmingh's compositions provides a unique opportunity to create scholarly literature that can be used at the Stellenbosch Music department.

The two string quartets used for the analytical exploration are *Strykkwartet no. 1* (1968) and *Prelude en Fuga* (1973). The works are compositional ventures into string writing. The string quartet as medium is a cornerstone for composers, with Haydn being accredited for the modern

¹ Symphonic work written for string orchestra.

standardisation and practice. Temmingh explores his avant-garde style in these compositions which he wrote while abroad.

1.2. Delineation

Lüdemann (1987, 1996, 2017), Franke (2011, 2012), and Viljoen (2009) already provide substantial context around Temmingh's music, specifically looking at stylistic qualities and historical influences. Most of these studies focus on Temmingh's symphonic and choral output. *Composers in South Africa Today (1987)* includes an extensive chapter by Lüdemann (1987:168-186) about Temmingh and his music. While this source is dated, it still provides valuable data, presented in a concise manner. The chapter includes biographical information about Temmingh's life and highlights musical elements: melody, harmony, counterpoint, rhythm, and form. Lüdemann's chosen music examples in this chapter are predominantly from Temmingh's instrumental output (Nude, Radar, Oboe Sonata, Music for two pianos). The string quartets are, however, excluded from these writings.

In this regard, Theunissen (2014) highlights the scarcity of South African string works in her thesis. Theunissen however, focuses on accompanied violin sonatas by South African composers. Scheepers (2019) represents the most up-to-date exploration of Temmingh's life and (specifically choral) music (at the date of writing this thesis).

Considering these sources, the current study builds on a body of research about South African Western Art music and specifically about Temmingh, as well as his contribution to the string quartet genre.

1.3. Purpose

Within the background and delineation provided, this exploratory study has three main purposes:

1. Provide an updated account of the composer's biography, with specific reference to compositional style.
2. Provide an analytical account of the string quartets to better navigate the bridge between theoretical understanding of the score and practical performance;
3. Produce engraved scores with editorial performance notes.

The creative output (edited score and performance) serves as primary sources when further investigation of the string quartets occur.

1.4. Literature Overview

Analysis manifests in a variety of methods; some focus on the perceptual analysis of the score, while others present non-formalised or formalised analysis. This thesis explores compositional analysis as the point of departure. This poietic process is a practice in creating a music score and decoding it.

Temmingh (1975) contextualises his own stylistic approach to composition with reference to various 20th-century composers. Concepts and techniques that inform those stylistic models then become increasingly central to understanding Temmingh's own work and style (Temmingh, 1975:68).

Style refers to a way of identifying distinctive quality, form, or type in compositions, as well as the techniques with which composers create an amalgamation of historic and contemporary influence (Dannenberg, 2010:46). When analysing music for its stylistic aspects, LaRue (2001:297) identifies three pillar categories: background, observation and evaluation.

LaRue's perspective on background is explained through the same lens as Dannenberg when he refers to the historical contextuality of the composition. Emphasis on significant contributions highlight the perceptual analysis in music, which may not always be immediately perceivable. It is worth noting these influences as it, in the end, does contribute (consciously or not) to the composition.

Observation is the second preparation in which LaRue (2001:298) makes us aware of the significant observation of our state of mind. As a researcher we must create a balance that identifies relevant material that is worth exploring while simultaneously staying focused on the greater overview of the analysis (LaRue, 2001:298). Lüdemann (1987: 170-187), for instance, focuses on melody, harmony, rhythm, and form to comment on Temmingh's style of writing. This process is indicative of the analytical structure used to conceptualise writing style.

The final preparation for style analysis is comprehensive evaluation of the work as a subjective interpretation (LaRue, 2001:299). Jackson in Randall (2006:25) criticises this subjectivity arguing for an unbiased reflection of the music, but this is not possible. Although Dannenberg and LaRue frame their methodologies somewhat differently, both are essentially looking for musical patterns that emerge from the music to create and justify coordination and homogenisation. In support of these analytical methodologies, Nettle (1963:35) states that music cannot exist without scale, rhythm, harmony, and form characteristics, acknowledging the coordination needed.

From an analytical perspective, this methodological framework reflects in research about Temmingh's symphonic work (Franke, 2012), organ music (Lüdemann, 2017) (Luitingh, 2010), and choral compositions (Scheepers, 2019). Franke (2011 & 2012) provides insights into his motivic and thematic usage through Rudolph Reti's method of motivic analysis. This method focuses on the motif in isolation and attempts to trace similar or adapted versions throughout a musical work (Solie, 1980:151; Levy, 1969:34).

Other Temmingh scholars like Viljoen (2009) provide a philosophical observation between creator and creation. This type of analysis shares roots of nineteenth century ideology where the work is an individual innovation and has implicit meaning (Meyer, 1984:23), and incidentally is the methodological bedrock of Temmingh's own doctoral dissertation (1975). Martens (2017:138-139), more recently, provides brief descriptions of the two quartets: her analysis is rooted in functional harmony and syntactical structure as defined by Swain (1995:293). Syntactical structure, in this context, is adapted from linguistic construction (Swain, 1995:282) and forms a common methodological tool to study harmony in tonal and post tonal music.

The concept of musical syntax is the essence of Schenkerian analysis, which Lüdemann (1987:170-186) employs in his earlier studies of Temmingh's music. Additionally, both Agawu (1989:286) and Swinkin (2007:78) make reference to the importance of identifying harmonic progression in Schenkerian analysis, and the correct description and labelling of harmonic progression is what will help to uncover the principle melodic materials (Swinkin, 2007:78).

Allen Forte (1973) provides methodological insight into the structures of atonal music. Here, pitch-class sets, and pitch combinations are used as a method to analyse atonal music. The music mentioned in this source predominantly consists of the composers Schoenberg, Stravinsky, Berg and Webern (Forte, 1973: ix), which Temmingh (1975:10) himself describes as seminal influences in his doctoral dissertation. Together with Forte (1973) and Straus (2016), the post tonal analytical strategies described in Christ, DeLone, Kliewer, Rowell & Thompson (1981: v-viii) provide a median between the methodologies of Lüdemann, Franke and Martens, and Forte and Straus.

Score editing and engraving, which forms an important component of this study, is a well-developed practice, with recent and authoritative subject guides by Powell (2002) and Gould (2011), as well as guidelines provided by all major music rights organisations. These sources, together with older established sources like Read (1964), Ross (1970), Roemer (1973) and

Stone (1980) provide an excellent framework for best practice in engraving and score editing. Urchueguia (2006:114) emphasizes the importance of editing as a means to translate a manuscript into a score that is more openly understandable; similarly, Gossett (2005:142) describes the principal role of the intent of the composer as it reflects in the edited score. Both these authors place strong emphasis on the role of thorough analytical and stylistic research in the editing process. To create any sort of edition requires the researcher to be well versed in the composer's vernacular: Gould (2011) is the most recent and comprehensive source that encapsulates the ideologies of both Urchueguia and Gossett, while synthesising the most established engraving practices of the past century.

In this thesis every performance of the music (rehearsal/recording/concert) constitutes a research opportunity. A method like this is reminiscent of Borgdorff (2012:5) and his explanation of artistic research as a culture of knowledge. The systematic process of learning the music (to play), studying the music (to form an interpretation), playing the music in the quartet, and presenting it as a final recital has intrinsic value of knowledge that is not necessarily captured in literature. The research is done inside the practice (Hannula, Suoranta & Vaden, 2014:3). This does not invalidate the music making process but serves as an 'alternative' method that informs and shares experienced knowledge (Borgdorff, 2012:22). Hannula et al. (2014:4) describe the process as the Inside-in approach. This method happens in real time and emphasises the acts of the conscious and its connection to history and the effects felt in practices of the past, present and possible future (Hannula et al., 2014:3).

1.5. Methodological Framework

This thesis addresses the three motivators (lack of accessible score, lack of contextual analytical research, and personal performance interests), as stated in the background. Through a combined methodology, the researcher will present an engraved and critically edited score accompanied by an analytical report and recorded performance. The trust overseeing Temmingh's archival material and manuscripts has communicated their support for this project, and its material needs.

1.5.1. Analytical considerations

Theoretical analysis spans over many spheres but what stands as fundamental is the score (Dannenberg 2010:46); the point of departure for this study will therefore be the scores for *Prelude en Fuga* and *Strykkwartet no. 1*.

The study is rooted in a combination of observational and experimental research designs as explained by Perri & Bellay (2012:69-72), that will draw findings from mostly primary sources and produce qualitative data. Analytical processes are adopted from existing studies of Temmingh's music, which have already been mapped in the literature overview, while the addition of post tonal analytical frameworks (also mapped in the literature overview) will provide further flexibility of design. By experimenting with these contrasting approaches (Reti - Shenker - Lüdemann - Franke - Theunissen vs Forte - Straus - Christ et al.), different results can be extracted from the music and compared to each other for further contextualisation and validation. *Drie Sonnettes*, which is regarded by the seminal Temmingh-scholar Winfried Lüdemann (personal correspondence, November 2019) as the epitome of Temmingh's string writing, will form the stylistic litmus for comments about string writing in the quartet scores. The main elements being considered in the string quartet (as in other analytical studies of Temmingh's music) are melody, harmony, rhythm, and form.

To look at **melodic themes** and their construction, I will use pitch-class set theory. Post-tonal music makes use of novel pitch combinations and frequent occurrence of these pitch combinations in familiar and unfamiliar environments (Forte, 1973:1). As Straus (2016:43) explains, pitch-class sets form the building blocks for the majority of post-tonal music. The pitch-class set is a collection of pitch classes that are unordered, and these intervals are what creates the musical idea/melodic motive (Straus, 2016:43).

In order to understand Temmingh's string quartets, I highlight Pitch Class Theory as a means to analyse the works. This theory has its own development process and is best suited when dealing with non-traditional harmony, which subscribe to various compositional conceptions and practices.

To understand pitch class set theory, we look to Serialism. Serial music has roots in a group of 20th century composers, known also as the second Viennese school (Rubin, 2005). At the head of these composers was Schoenberg (1874 – 1951). Together with his students, Berg and Webern, he created a response to the tonally centred music of the common practice period that had preceded them (Zupko, 1964:167). With the dissolution of tonality, Schoenberg devised a way to abolish tonal and chromatic hierarchy altogether. The 12-tone row was Schoenberg's solution to organising every chromatic note in a system devoid of tonal hierarchy. This new innovation allowed the composer to present all twelve chromatic notes in whatever order preferred. Once the row is presented, further manipulations can be applied through the use of retrograde, inversion, retrograde inversion, and transposition. However, the manipulation of

the practice Schoenberg intended, stated that no note may be repeated before the tone row was presented in its entirety (Straus, 1987:5).

After the creation of the tone row, composers began to look at how the row(s) could be employed in composition. This led to the building blocks of sets and microstructures that would eventually make up a row and subsequently the entire composition.

Pitch class set theory is not designed to analyse tonal harmony. Previously used concepts, like a chord, are not applicable in this theory. This theory is mathematics in practice, making use of a numerical system used to code pitches and the distance between them (Straus, 2016:43). With the increase in non-tonal music since 1908, the traditional functional harmony (making use of roman numerals) no longer efficiently explains the analysis of the music (Forte, 1973:ix).

Schenkerian analysis focuses on large scale background investigation of mainly triadic harmony which is not an efficient enough method to analyse Temmingh's string quartets. Even though composers increasingly composed in an atonal style, there were no widely accepted systematic approaches to highlighting the relation of different pieces using similar concepts to create music (Forte, 1973:ix).

As mentioned in the previous section, new ways of analysis accompanied new ways of composing in the second Viennese school. Pitch class set theory became a popular method that analysed serial compositions by applying set theory mathematics to music (Straus, 2016:xiii). Through this, the tone row is divided into smaller sets of three, four or six notes known as trichords, tetrachords and hexachords, respectively. These “chords” are known as sets and analysed in terms of their absolute intervallic content (Straus, 2016:13-14).

The groups of three, four or six are used because they can easily be divided into the tone row; either as three groups of four, four groups of three or two groups consisting of six notes. This can occasionally be grouped in irregular grouping, dividing the row in one group of five notes and another of seven.

The mathematical aspect in this theory is most evident when looking at the actual analysis of music. Pitch is no longer important. It is only used as a reference to understand intervals and how they fit into their respective sets. Previously important elements, like accidentals, also have no influence in this theory. Enharmonic spelling of notes does not alter the way in which we view the pitches.

This practice of enharmonic equivalence is another manner in which to distinguish this theory from others. When looking at functional harmony, the common practice differentiates between note names and their different function within a larger tonal system. In D major, for example, F# is scale degree 3 whereas Ab is scale degree flat 5. These different scale degrees inherently then have different functions due to their position (Straus, 2016:45). In the practice of pitch class set theory, notes are enharmonically equivalent functions as equivalent.

After abandoning the practice of such distinguishing features, this theory created a different manner of distinction; pitch and pitch-class. Pitch is viewed from a scientific perspective that refers to a note that sounds at a certain frequency. Pitch-class is the group of pitches that all have the same note name. These note names include all enharmonic spelling of the notes (Straus, 2016:3). Pitch class C# includes all pitches of C# regardless of how it appears in the score; Db would also be categorised under the same pitch-class.

A number-based system, referred to as the integer notation of pitches, is in place which assigns each note name to an integer. These numbers are representative of the amount of semitone distances away from the initial start of the row. The note names and their integer are presented in the diagram below:

Integer	0	1	2	3	4	5	6	7	8	9	t	e
Pitch-Class Content	C	C#/Db	D	D#/Eb	E	F	F#/Gb	G	G#/Ab	A	A#/Bb	B

The integer numbers **10** and **11** are coded as letters **t** and **e** so that there is no confusion of integer combinations. By using this method of coding, each pitch has their unique character that is a fixed representative. Instead of referring to pitch classes like D and G, we use the character information (integer name) assigned to these pitches. The note D is referred to as **2** and G becomes **7**.

We then manipulate these pitch classes in a mathematical fashion to reveal the interval class. As Straus (2016:12) describes:

“Just as pitch class contains many individual pitches, so each interval class contains many individual pitch intervals”.

Here we also must be aware of the distinction between interval and interval class. The interval is the distance between notes measured in semitones (Straus, 2016:9). It takes into account the

direction in order to identify if the distance between the notes are ascending or descending. The interval class is entirely free from direction and is compressed to fit within an octave (Straus, 2016:9). Further it is inverted to be a tritone or smaller.

To calculate the interval class (ic), we use the mathematical method of subtraction. We subtract the higher pitch class from the lower and this equals the ic. The diagram below demonstrates how to calculate pitch class.

Note name= F	Pitch class= 5
Note name= A	Pitch class= 9
Interval class = $9 - 5 = 4$	

As stated before, every pitch belongs to one of twelve pitch classes (Straus, 2016:10). To produce any other member of the same pitch class will require adding or subtracting twelve semitones. Any number smaller than 0 or greater than 11 will be equivalent to some integer relating to 0 or 11. To calculate, one can just add or subtract twelve (or any multiple). The process of this conversion is known as arithmetic modulo 12 (MOD 12). Mod 12 is visually represented as a clock face that moves in a circular manner (Straus, 2016:6). This contrasts against the linear illustration presented in the staff notation where the pitches are either ascending or descending

Rhythm will be analysed by using the third edition of *Materials and Structure in music* (Christ et al, 1981). New attitudes are reflected in the twentieth century regarding sound resources and organizing musical materials (Christ et al, 1981:337). The lesser emphasis on meter and stronger emphasis on rhythmical patterns and division of duration provide a good introduction to the building blocks of twentieth century music (Christ et al, 1981:339-342).

Another characteristic of atonal music, which Temmingh often uses, is the lack of resolution of complex chords (Christ et al., 1981:392; Temmingh, 1975). To explain **harmony** in the string quartets, Straus's (2016:159) post-tonal theory framework provides insight into interval cycles, voice leading, set class, contextual inversion, and triadic writing in post tonality (Straus, 2016:163-196).

Lüdemann (1987) uses tonal vocabulary to explain the form of Temmingh's later, more tonal, music. With these atonal or quasi-atonal quartets, the structure of the composition cannot necessarily be explained through similar terminologies. Instead, the prime forms as described

by Forte (1973:3) could be used to look at ordered and unordered sets in the quartets. These sets are representative of distinct permutations that construct the composition (Forte, 1973:4). This method of finding the permutations will help me to reveal the number of sets and the normal order. This approach will reveal unique findings about the form that tone-centre based methods cannot. It is necessary to note that the analysis is conducted from a post-modern perspective and does not necessarily subscribe to the ideologies that Temmingh might have subscribed to at the time of composition.

1.5.2. Performance as research

With the strong emphasis on an integrated master's degree, these two string quartets also formed part of my chamber recital. When rehearsing the two string quartets, I was able to draw from the practical realm and provide comments on the works from a string player and chamber music perspective. In this way the practice of music became a research method which I used as artistic research* (Burt-Perkins & Mills, 2008: 26-27).

The methodological perspectives that I aim to frame the practical performance component with, will be action research. Action research, according to McCutcheon & Jung (1990) is a cyclical process that follows the procedure of 1) problem identification, 2) planning, 3) actioning, 4) observation and 5) reflection². Although the action research component could potentially be a study on its own, it will be treated as a minor component of the proposed research project and does not take central focus.

1.5.2.1. Initial Problem Identification

Drawing experiential³ knowledge from the process of practicing/rehearsing and performing Temmingh's string quartets with an ensemble and communicating those findings in the analysis and edited/engraved score.

² Furthermore, these sources provide a more detailed framework of action research that will be applied in the proposed study: Pernecky (1963), Carr & Kemmis (1986),

³ Using the researchers lived experience/knowledge to contribute to the content and creative thinking, managing and conclusion from the research.

*Due to Covid-19, this action research model was impacted, and the documentation process could not proceed as planned.

1.5.2.2. Planning

Planning here refers to the theories that will be used to analyse the music. Different theories (referred to earlier) will influence the outcome of the analysis. Reflections based on the results promote the considerations for the practice and performance of the music.

1.5.2.3. Actioning

Taking the analysis to inform stylistic and interpretation decisions when practicing the music allows any sort of performance (practice, rehearsal, recording, recital) to be a contributing method to the research (Gluzman, 2018:106).

1.5.2.4. Observation

Observation happens in the practice sessions. Each member in the ensemble brings their own experiential knowledge of music; this contributes to the analysis. In combination to the already analysed score the collaboration between situated knowledge⁴ and the score will inform the players. With the ensembles' permission, each rehearsal session will be recorded in order to compare and reflect on the progress made in the session.

1.5.2.5. Reflection

This step marks the reflecting on the choices made about performative elements (dynamics, phrasing, bowing, articulation), as well as the music aspects such as idiomatic writing for string quartet and acknowledge challenges experienced during the session.

Documentation of this methodology is necessary to reference and validate decisions made. Noting the findings will be in a written and recorded format. This will be added as an addendum that showcases the process of interpretation.

1.5.3. Engraving and editing

This process begins before analysis and performance of the music, but eventually becomes a synthesis of all the work that will occur throughout the study. The engraving process has started ahead of my research and already there are preliminary observations made that need further investigation. Editing will include suggestions by performers during the rehearsal/performance processes, and additionally I will employ my analytical knowledge of the music to provide further musical context for future performance. Further interviews with members of the performing ensemble could provide further contextualization during this process.

⁴ The idea that all forms of knowledge reflect the conditions in which they are produced, and at some level reflect the social identities and social locations of knowledge producers.

2. CONTEXTUALISATION

2.1. Biographical contextualisation

Roelof Temmingh, and his music, exist in a sphere where the idolisation of Euro-Western art music has created a cyclic pattern of domination whereby it conforms to Western practice and method (Froneman & Muller, 2020:207). This is no different for many South African composers that create music in this Western idiom. Recent efforts highlighted by Froneman and Muller (2020:212) have welcomed South African Western Art practice as part of the diverse spectrum that encapsulates the term South African music, while placing it in context within Western Art Music. No longer can one paradigm be excluded from the other. The two now draw from one another. It is with this perspective that I classify Temmingh as a South African composer.

Temmingh is one example that demonstrates the amalgamation of paradigms of the west and the other. Arriving in South Africa after emigration in 1958 from the Netherlands (Suid-Afrikaanse Musiek Ensiklopedie, 1986:346; Lüdemann 1987:167), Temmingh aged 12, pursued a career in music and contributed to South African Western art music in an overwhelming manner. Unknowing to him, Temmingh advanced the repertoire of the South African-Western art idiom through the combinations of his personal and cultural influences from his various educational backgrounds that included South Africa, Germany, and the Netherlands (Suid-Afrikaanse Musiek Ensiklopedie, 1986:346). Each contributed a significant relevance and forms part of Temmingh's compositional style.

Temmingh was born on 28 September 1946 in Amsterdam, the Netherlands (Lüdemann, 1987:167); he was the third born of four children. His father, Roelof Willem Temmingh snr, was a gifted organist and music teacher. Just as the father, the rest of the Temmingh household had an innate capacity for music as two of Temmingh's brothers also pursued a career in music (Ludemann, 1987: 167).

Roelof, twelve years of age, and this family immigrated from the Netherlands to South Africa. They arrived in February 1958 and settled in Griekwastad, Northern Cape province (Martens, 2017:42; Lüdemann, 1987:167;). Temmingh snr. took up a post as a music teacher at one of the schools in this town (Suid-Afrikaanse Musiek Ensiklopedie, 1986:345; Lüdemann, 1987:167).

The years between 1958 and 1960 are considered to be transition years as the family moved again (Lüdemann, 1987:167). The relocation was to Klerksdorp, North-West province. This stay was not permanent as the family moved to a suburb in Cape Town after living in Klerksdorp for only one year (Lüdemann, 1987:167). Temmingh completed his school career at D.F Malan High School, matriculating in 1964 (Martens, 2017:47).

Temmingh started to compose early in his teenage years (Franke, 2011:11). It was only at the age of thirteen that he notated his compositions with pen and paper (Lüdemann, 1987:168). Before this his compositions only existed as improvisations on the piano. Once the process of composition started, Temmingh continued writing for various instruments throughout his teenage years. Even though he composed a lot, Lüdemann (1987:168) claims that composing was not a serious practice.

His composing was influenced by Maurice Ravel, Claude Debussy, Igor Stravinsky, and Paul Hindemith. As an adolescent, Temmingh saved and often bought records of the mentioned composers. According to both Franke (2011:11), Lüdemann (1987:168) and Theunissen (2014:131) this shaped the style of his writing in his formative years. One composer worth singling out is J.S Bach. Temmingh snr had a great appreciation for Bach, often performing his organ works. From the wide influence on Temmingh's style, Lüdemann (1987:167) claims that Bartok was the most influential as his style was the ideal for Temmingh and is realised in much of his work ever since.

When applying to University, Temmingh was not sure about music as a study option. Instead, he enrolled to become a minister of religion (Lüdemann, 1987:167; Franke, 2011:11). In preparation for this course, Temmingh followed a B.A (Bachelor of Art) in languages. Temmingh failed one language, Greek, in the final exam and was forced to repeat the module in the following year (Lüdemann, 1987:167). This would prove to be a critical moment for Temmingh's future. With the additional time, he decided to pursue music. With the help of Gideon Fagan and Gunter Pulvermacher, the head of department at the time, Temmingh enrolled and was admitted to the third year of the BMus program (Franke, 2011:11). During the course of his studies, music became increasingly important. Music was now his main interest while his B.A modules shifted to secondary focus.

In 1969 he graduated with a BMus and B.A degree; subsequently he finished his MMus in composition the following year, 1970. From 1972 onwards, Temmingh settled and secured a post as composition lecturer at the University of Port Elizabeth (Lüdemann, 1987:167; Franke,

2012:107). In that same year, he mustered up the courage to submit his compositions to SAMRO⁵ for the young composer's competition which he won.

That competition money, together with other financial aid, allowed Temmingh to participate in the Internationale Ferienkurse für Neue Musik in Darmstadt (International music festival for new music) where another significant moment occurred. On the list of festival tutors were Karlheinz Stockhausen, Mauricio Kagel, Gyorgy Ligeti and Carl Dalhuas (Theunissen, 2014:14; Lüdemann, 1987:168). They represented a shared aesthetic and new attitude towards music. Temmingh subscribed to these ideas which is now prevalent in his early compositional style. Lüdemann also emphasises the monumental impact this festival had on Temmingh; he now had first-hand experience of how to interact with contemporary music and the trends it had in Europe. From all the educational experience, Lüdemann (1987:168) claims that Ligeti had the greatest impact on the young Temmingh.

This course can be marked as the acme in Temmingh artistic development (Franke, 2011:11; Lüdemann, 1987:167). First-hand experience was gained to learn about trends in contemporary music. At this time, Western art music and its development abandoned previous ideologies of the tradition and searched for new ways to create music (Zupko, 1964:167). This new exploration, now called avant-garde, had a lasting impression on the eager Temmingh (Lüdemann, 1987:168). Darmstadt was considered to be a place where music and surrounding practices were reborn (Jones, 2015: 66). According to Zupko (1964:166) the tendency was to teach variable forms and aleatoric style compositions that permitted the composer to exercise a limited degree of control over the structure and performance of their works (Zupko, 1964:166). This meant that musical elements like pitch, dynamic, articulation and duration were influenced by a model of serialism that were implemented (Zupko, 1964:166; Jones, 2015: 67).

The ideologies have roots in several fields, all that inform this new concept of composition. Theories and ideas were drawn from Becker's psychology, Bhoemer's arbitrary law of communication, Morethenson's hearing psychology, Linke's mineralogy and Grandi's typography (Zupko, 1964:167). It is these sorts of contributions that affect the overall aesthetic of musical cognition and perception.

⁵ South African Music Rights Organisation is a copyright asset management society that protects the intellectual property of music creators.

After returning to South Africa, in 1973, Temmingh was appointed as composition and musicology lecturer at Stellenbosch University (Martens, 2017:48; Lüdemann, 1987:168). He stayed in this post until his retirement. It was only in 1979 that he would take sabbatical leave to go to Europe. Temmingh spent six months at the Instituut voor Sonologie in Utrecht, the Netherlands (Martens, 2017:48). This institution, founded in 1960, quickly acquired a reputation surrounding computer music which attracted Temmingh. While there he was under the tutelage of Werner Kaegi (Martens, 2017:48; Ludemann, 1987:168).

This period of Temmingh's career highlights the plethora of guidance received from a wide variety of composers, each rooted in characteristically different practice but still in the same ideological paradigm of thought.

The two string quartets that will be analysed in this thesis are the product of all the contributing teachings made in Darmstadt and during the first phase of writing style in his life. Weighted more towards the avant-garde style of writing, Temmingh manifests a serialist style of writing. It is therefore expected that these string quartets will bear these teachings of the ideological trademark of the time.

2.2. Compositional language and processes

The globalisation of his education is strongly evident in the titles of his works (Lüdemann, 1987:168). *Labola* (1972), *Sacred Bones* (1997) and *Buchuland* (1998) encapsulates the idea of a uniquely African cultural practice being portrayed through the Western Art Music idiom. According to Suid-Afrikaanse Musiek Ensiklopedie (1984:328) his works are categorised under 2 broad sections; instrumental and vocal. His instrumental category includes his orchestral, chamber music, keyboard, and electronic work. In this instrumental section, Temmingh explores interesting instrument combinations and titles. One example is his inter-period duo consisting of flute and harpsichord titled *Ballade*. Another is his version of the string sextet. In this version he makes use of a string quartet and two flutes rather than the expected romantic period setting of two violins, two violas and two cellos. The attention that is brought to his titles are indicative of his divergent nature (Lüdemann, 198:168).

Despite the large musical output Temmingh produced, only Lüdemann provides a comprehensive analysis in *Composers in South Africa Today* (1987). Lüdemann discusses Temmingh's writings through pivotal features: design, melody, rhythm, and harmony in a systematic manner that draws from many analysis types; Schenkerian –, melodic and motivic

– and functional harmony analysis are some methods employed to describe the compositional language of the composer. Scheepers (2019:2) consolidates these features while adding some of his own ideas to aid his investigation of Temmingh’s choral music. Franke (2011:10) has also produced smaller scale analysis that describes Temmingh’s early music as “experimental”. Her analysis is mainly rooted in motivic development and motivic tracing. Scheepers (2019:39) suggests analysis of his music be done through a polystylistic approach due to the fluid interchanging of older styles and dynamic influences of contemporary style. While I agree with each conclusion of the respective analysts, I find Scheepers’ choice of analytic language most suited to investigate the string quartets.

Fortunately, his string quartets follow the traditional setting of two violins, viola, and cello (Cassidy, 2013:319). Though not nearly as provocative as *Nude* or *Radar*, the titles of the string quartets are simple to investigate. *Prelude en Fuga* is a citation taken from the cornerstone baroque medium (Christ et al., 1981:188). Historically the prelude and the fugue have great relation. The pairing of the two movements are associated with Bach and his 24 preludes and fugues written in the Well-Tempered Clavier (Giraud, Groult, Leguy & Levé, 2015:81). Even though we refer to Bach as the consolidator of this standard medium, other composers before, like Johan Casper Ferdinand Fischer, already wrote a 20-key cycle dating earlier than Bach (Mann, 1987:263; Lester, 2001:52).

In the Baroque era the prelude is often considered to be a preface or overture-like movement that is succeeded by a longer, more complex movement (Mann, 1987:49-50). Tempo and structure of a prelude may vary. Later, in the Romantic era, the prelude developed into a stand-alone work that may be more complex in nature (Mann, 1987:64, Feraru, 2019:7). Leaning toward being more lyrical, this movement contains motifs that may relate to the succeeding movements (Lester, 2001:67).

The fugue is imitative in nature. This contrapuntal work is written in two or more voices. Temmingh writes for four voices. The fugue is based on a musical theme introduced at the start of the work. Each of the other voices subsequently takes up the theme, taking turns to alternate between the motive and counter motives (Feraru, 2019:33, Mann, 1987: 301). The structure of the fugue is based on varying development sections, episodes, and free material. In the 20th century, the position of the fugue broadened. Composers like Stravinsky, Bartok and Ligeti incorporated fugal writing in their symphonic works rather than keeping it connected to the expected prelude (Christ et al., 1981:192 – 200). Temmingh employs both positions of the fugue in his two string quartets. In *Prelude en Fuga*, the two movements follow each other

bearing its historical trademark use. *Strykkwartet no. 1* contrasts this by using the fugue, detached from the prelude, within the separate movements of the piece. This 20th century approach shows the influence of the above-mentioned composers on Temmingh's development as a composer.

The string quartets used in this thesis are of great relevance to uncover more about Temmingh's writing style. There exist many analyses of his vocal and orchestral writing but none pertaining to his string/string quartet writing style. Lüdemann aims to provide a holistic overview of his writing style, referring to his melody, harmony, rhythm, and form. In the analysis, I will use the same elements, but different methods, better suited for application on the string quartets.

3. STYLE OVERVIEW

3.1. Comparative review

Temmingh provides great methodological contrast between his two string quartets. Innovations, such as rhythmical ambiguity and novel pitch combinations, are at the forefront as we identify the similarities and differences between the two works.

Looking at these seemingly post-tonal quartets, Temmingh's compositional methodology appears to be largely divorced from the classical perspectives provided by older, standardised analytical tools. Instead, a postmodern perspective, which aims to navigate these various established theories and find new insights within a constellation of applied methods, helps to contextualise the ideological framework of these two works for the analyst. This kaleidoscopic musical ideology is at the nucleus of both the works and is the reason for their similar and complementary musical language.

In this section the function and relationship between the musical elements will be looked at to discover if any meaningful interpretations can be found. Identifying significant aspects in relation to the composer and his milieu further informs the stylistic aspects of compositions (LaRue, 2001:296). A compact outline informs the thought process that we will use to navigate this chapter.

1. Background	*Frame of Reference *Significant Observation
2. Observation	*Dimensions; Large, middle, small *Elements: sound, harmony, melody, rhythm *Growth
3. Evaluation	*Achievement of Growth *Balance *Originality *External consideration

Contextualising the historical framework of the music needs brief attention to understand where and why Temmingh was writing these string quartets. As mentioned in the previous

chapter, both pieces were conceived as theoretical writings while in Darmstadt. With no specific players in mind, Temmingh was at liberty to manipulate harmony, rhythm, and various other compositional elements and techniques. The new ideology of music focused more on the innovation that music could produce rather than focusing on the listener or the performer (Zupko, 1964:166)

This new style of writing greatly influenced Temmingh, especially when we compare this string quartet to his later output. When drawing this comparison, it is undoubtedly that Temmingh's style evolved from avant-garde to functional harmony, following guidelines associated with this context. This comparison is presenting the first pillar on which Temmingh's style rests, the fluidity in approach.

Observation consists of three equally important streams that inform the musical syntax in the music (LaRue, 2001:299). Small, medium and large dimensions provide insights into how melody, harmony, rhythm and texture is used to create a sound world unique to Temmingh.

At the smallest dimension we inspect motive, phrases, and sub-phrasing. After the analysis of both string quartets, it is evident that Temmingh demonstrates phrasing through interval class. Melodic sets built from interval vectors are organised in various contouring patterns, either descending, ascending or a combination. These patterns are inherent in each melodic set. Once identified, it is up to the interpreter to determine how many sub-phrasings fit within the broader phrase structure.

In the middle dimension of musical syntax, we approach sections in the music. Vast characteristics are conveyed within these sections. LaRue (2001:299) measures each element through the process of Sound, Harmony, Melody, Rhythm, and Growth (from here abbreviated to SHMRG⁶). In Temmingh's music there are various manipulations on interval class that summarise the mood of each section. Together with tempo indications and melodic set direction, we are able to generate an overall impression that becomes the representation for a single section.

In the large dimension we now look at the music as a musical unit, this can refer to entire movements, complete successions, or even larger multi-piece correlations (LaRue, 2001:300). Here we observe comprehensive considerations of SHMRG. The interaction between these elements produces the unique style we attribute to Temmingh.

⁶ *Sound, harmony, melody, rhythm and growth is a method of analysis that links with the structure used by Lüdemann (1987).*

3.1.1. Sound

Sound is a dynamic characteristic but stays within a similar sphere throughout both string quartets. Interval qualities determine the transparent or, sometimes ambiguous, timbre. This ambiguous nature of the music adds to the poly-stylistic style in which a hybrid voice is developed. Strong contrasts and elements of grotesque harmonic climaxes help to prioritize melodic fragments. Temmingh achieves this through static sound masses which are often chromatic and dissonant.

Temmingh also achieves his sound through building of layers (Franke, 2012:107). Polyphonic layers consist of chromatic harmonic devices which highlights the individual importance of the voices while maintaining the collective structure of the ensemble. Fragmentation further adds to this compositional technique as transposed melodic sections are scattered through the voices. Focus shifts rapidly between voices, keeping timbral and textural interest in the music.

3.1.2. Harmony

Harmonic structure is by far the most unique element of the string quartets. Populated with dissonance, Temmingh manipulates interval class in an extreme manner to achieve atonal ambiguity. Transposition is a characteristic compositional tool used to transfer the same interval patterns in the different voices. In this manner Temmingh builds harmony vertically and horizontally; vertical harmony being the secondary harmonic structure.

Each voice has a certain function to fill within this harmonic structure. Temmingh shifts melodic sets, as a whole or in fragments, throughout the voices. Through this, Temmingh achieves clear accompaniment style sections. This stylistic quality in his accompaniment often contrasts the intricate interconnectedness of passages when voices depend on one another to form dense textures. In this regard, the string quartets simultaneously consist of four equally important voices while maintaining brief passages of individual hierarchical importance.

Temmingh invests greatly in melodic sets so that it contributes to the strident atmosphere in the music. Intervals within the sets are mostly conjunct, moving in a stepwise manner ascending or descending. Occasionally this stepwise movement is broken with big leaps. This results in the displaced motion of punctuation in the music that, when adding the additional harmony of the other voices, creates heavy dissonance.

Patterns are clearly heard in the melodic sets, and they are often repeated within movements. Temmingh creates sequences and applies them in various configurations. This provides variations in the individual voices but together becomes a mass of sound each time in a

transposed whole or fragment. Due to octave displacement, the range that Temmingh uses in these sequences rarely breaks the octave. Jumps appear to seem bigger than what they are.

3.1.3. Melody

The idea of both string quartets is rooted in a highly specialised manner of composition. Using pitch class set theory techniques, Temmingh forms ordered rows of pitch material that are similar (if demonstrably different) to twelve-tone serialism. These sets, with their fixed-ordered objects that build melodic and harmonic foundations, provide the composer with a palette of compositional tools that allow for immense variety within a unified syntax.

A technique, dovetailing, is often used to join sets that share one (or more) pitches. This opens numerous combinations of sets and supersets, which results in a seemingly endless variety of melodic patterns. As analytical exploration showed, Temmingh applied sets in distinctive ways in each movement of both the *Prelude en Fuga* and *Strykkwartet No. 1* to ensure that individual melodic sets systematically correspond with the Forte vector catalogue.

Prelude en Fuga shows great use of melodic content. Pitch class set theory is used to construct both, but its applications are influenced by formal structure. The form in which Temmingh composed the two movements has an evident impact on the role of the melodic set. In prelude, melodic sets are easier identifiable because of the placement in instrumentation. Temmingh disguises melody with thick texture and rhythmic variations in the *Fuga*. Form also influences sets because they become divorced from metre and sets, in many of the sections, are changed.

It is in the *Strykkwartet no. 1* that Temmingh displays his diverse compositional nature. In no sense is this string quartet a conceptual unit, but we do see another attempt at a cyclic finish near the end of the final movement. Melodic sets, within their metric framework, are quoted at the end as closing passages in this quartet. This use of cyclic quotations can then be considered idiosyncratic to Temmingh's writing style.

While the treatment of harmony, form and texture is different, he still manages to connect the sound worlds through both movements. The cyclic pattern achieved, through the repetition of a sizable section of prelude, occurs at the end of the fugue. This method of unification in structure is a trademark of the baroque era, appropriately also suiting the historical structure of the prelude and fugue.

3.1.4. Rhythm

Rhythm features distinct novelties in Temmingh's construction. He uses clear usage of foreground and background rhythmic layers which explains why Temmingh writes them in a fragmented manner spread throughout the voices. This hallmark of his writing becomes expected as we see the divorce in metric and time signature. The complex relationship between these two elements creates the interesting rhythmic patterns that arise throughout both quartets.

Rhythm is further accentuated through repetitive patterns that provide the music with forward momentum giving the music its drive. These patterns make use of various layers which build up to create complex rhythmic structures. Temmingh frequently starts melodic sets on the offbeat of the pulse, creating syncopation. This component creates metrical tension. Throughout both works, metrical tension is an effective compositional tool which, as discussed by the quartet ensemble, contributes to the intense sounds ranging from introspective melancholic sections to frantic sections that provide an overwhelming numbness.

Temmingh rarely aligns rhythmic patterns. When he does align them, the music sounds more stable versus when it is syncopated. Brief sections of calmness then makes way for Temmingh to connect sections together for structural uniformity in the pieces. He uses inversion as a way to create variation while maintaining the intervallic relationship between pitches.

3.1.5. Dynamics

Dynamic markings, together with articulation, contribute to the stylistic finishing of the quartets. Temmingh uses dynamic markings sparsely in both of his string quartets. The quality of these markings are what positions them to have considerable effect on the sound. In the *prelude en fuga*, a detailed outline of dynamics shapes the atmosphere. The music makes use of *pp* and *ppp* more than any other dynamic range. Coupled with the harmonic makeup, the work becomes eerie, reminiscing of dark, sombre passages similar to Shostakovich. Short interjections of louder and dense timbral and textural passages feature making use of articulation variations.

3.1.6. Growth

Although the musical elements are divorced from one another for its individual application in Temmingh's string quartets, they all inform each other to reinforce the unique characteristics of the music and create the unique sound world of Temmingh. The movement of the music is never static and the complex extension of the coexistence of SHMRG results in Temmingh's

final product. For the majority of both quartets Temmingh provides clear points of structural changes which adds to the strong narrative in both works.

Considering these various factors that inform Temmingh's style, the general impression of Temmingh's string quartets then lies in a constellation of three important considerations: historical context, time period, textural considerations and application of musical elements and emotional expression. Once combined, these all three aspects create the emerging stylistic effects that LaRue argues of Temmingh; 1) Historical context time period informs the interpreter of the setting under which the composition was conceived and the implication it has on the overall aesthetic; 2) texture is a tool used to emphasise the instrumental voices in their individual and collective capacity, and their ability to create polyphonic and homophonic textures; 3) The fluidity and sometimes rapid changes between textural devices becomes an expressive tool that, combined with other elements of timbre, register, balance, and harmony, helps Temmingh to narrate softly introverted or dramatic climatic sections.

Another prominent feature exclusive to these works is Temmingh's use of transpositional processes, and the way in which this affects timbre in each movement. The timbral qualities of sections are rarely created by any voice, instead all the voicing contributes to the variety presented in *Strykkwartet no. 1*. In each movement, Temmingh is static in register. Through large parts of each movement, the voices fulfil their respective roles in creating a dense timbre. Although there is rarely a shift in register, the repetitive production in timbre unifies this work. It showcases other musical features, such as rhythm, harmony, melody and texture, and its manipulation to escape from the monotonous timbral application.

Sectional divide in structure is another way that Temmingh conceals static registers. New sections bring new moods and character into the pieces. Although abrupt, the character change provides relief from extended melodic sets and harmony.

Both string quartets present commonalities in compositional methodology that Temmingh uses, but he demonstrates that the treatment of the methodology, visible in the musical elements, leaves space for innovative ideas and techniques to shine through.

4. ANALYTICAL DISCUSSION

4.1. *Prelude en Fuga*

4.1.1. Form

Temmingh approaches form in two different ways according to Lüdemann (1987:183). Consideration of the medium and purpose determines certain structural factors in his music. The string quartet refers to the instrumentation that Temmingh uses. We see that the historic knowledge embedded in the *prelude en fuga* was taken into consideration when composing. What Lüdemann describes as scoring, refers to ensemble combinations that suit the aesthetic of the stylistic quality genre. This means that this *prelude en fuga* is more suited for the string quartet rather than for chorus or mixtape.

Comprehensibility is described through the simple or complex nature of his works. The degree of difficulty is determined by the occasion the piece was composed for. The generalisation made by Lüdemann (1987:183) insists that his more complex pieces are often those not commissioned. This allows Temmingh to explore form and deviate from the norm. Commissioned pieces reserve this exploration and instead showcase his Bartok and Shostakovich influences (Lüdemann, 1987:183).

Motivic material helps create form. It is rare that Temmingh's music will be a-motivic (Lüdemann, 1987:184). It is this recognisable motivic material that builds form through repetition. Repetition forms part of the micro-building blocks that guide the listener. The motif may not always be predominant but the procedure of having a three-bar motif, in the case of *fuga*, shows examples of formal structure being employed. These points of orientation that makes the music accessible to the listener (Lüdemann 1987:184). This is what we see in *prelude en fuga*.

The prelude better highlights the use of form between the movements. Earlier analyses shows the motivic material being extended and developed. The three-note motto is repeated throughout. The violin 1 melody is based on interval classes that are present later in the movement. This coherent approach creates identifiable sections brought together through tightly structured musical ideas.



Figure 1: The original melodic sets in the violin 1 part, in bar 14.



Figure 2: These are the variations of the original melodic set as it appears throughout the piece.

This three-note motto is further transposed throughout the voices. Various inversion and fragmentation of this figure allows Temmingh to develop numerous extensions. This type of organic development promotes recurring sequences that grow to become new ideas while remaining connected to the original motif.



Figure 3: This is the extension of the three-note motto in the violin 1 part.



Figure 4: Rhythmical syncopation influencing the three-note motto in the viola part, bar 17.

When looking at the sectional structure of the prelude, its most striking feature, regarding form, is the arch form⁷. Having this part in this movement is seen as a novel use and can be considered experimental of Temmingh. This type of form creates interesting variation and progression (Wilson, 1992:30).

The fugue is different when considering the use of formal structure. Temmingh has four separate sections in the fugue. This becomes a superimposed strategy that highlights motif through contrast (Lüdemann, 1987:185). It is clear to hear when Temmingh stops with the first section and starts with the second. In this instance, Temmingh uses tempo indication and new material to signify sections. These sections are self-contained and are never left open ended.

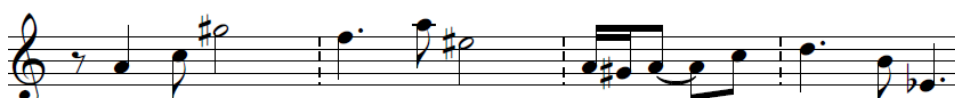


Figure 5: The four different sections in the fugue. From left to right the sections start in bar 1, 38, 58 and 74, respectively.

⁷ Arch form refers to music structure where a sizable portion or section in a musical composition is presented in reverse order.

The different approaches regarding form confirm Lüdemann's (1987:185) statement on consideration. The purpose of the music is purely technical practice of the genre. It is therefore that we see tight structures that demonstrate well-constructed sections. In the case of prelude, it is unification through extension and repetition that builds form. In the *fuga*, it is the self-contained sections that help contrast each other and show formal structure.

4.1.2. Melody

Lüdemann (1987:170) describes Temmingh's melodies as interesting and expressive in nature. Scheepers (2019:38) is in agreement and highlights Temmingh's melodic gift developed through comprehensive investigation of poetry (text) and melodic accompaniment. The composer is able to capture a wide range of emotions throughout his melodic writing, which more often than not contain thematic material in its entirety (Scheepers, 2019:54).

In this work, Temmingh achieves the construction of melody through pitch class sets⁸. These sets become an important way of building the identity of the musical idea. Various melodic sets may be constructed, or existing sets may be manipulated. Onto the melodic set, the composer then adds register, rhythm, harmony, texture and order to shape the sound (Lüdemann, 1987:186).

In the prelude, fragmentation of the melody is evident in the opening six bars. Temmingh writes sustained pitches, each time with one voice changing pitch in consecutive bars. This creates the fragmented building blocks of the first melody in this movement. When we set this melody in its integer coding, we generate the set [9,T,8,2].



Figure 6: This is the pitches used to build the first melodic set.

It is evident from this beginning that semitonal movement is highlighted. It is interesting to note that Temmingh starts each voice on pitch class 9, and from there starts to handle each voice as individual subjects.

⁸ A pitch class set refers to unordered sets of pitch classes (Straus, 2016:4)

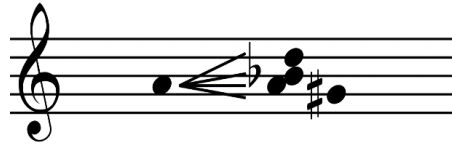


Figure 7: Temmingh starts on pitch class 9 (A). The voices then highlight semitone movement in their linier capacity.

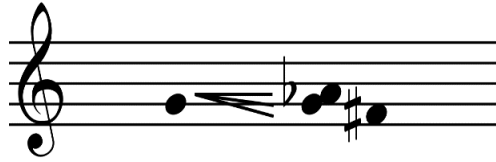


Figure 8: Similar semitone movement highlighted from bar 8 onwards.

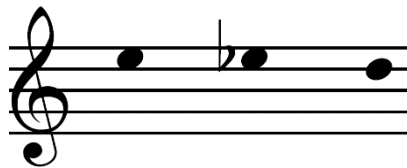


Figure 9: The violin 1 part, in bar 14, also shows the semitone movement.

When analysed as individual lines, Violin 1 and Viola constitute the semitonal changes in contrasting motion: Violin 1 moves one semitone up while the viola is moving one semitone down. The cello moves in disjunct rather than conjunct motion, which adds further contrast to Violin 1 and Viola. The violin 2 part remains on one pitch and acts as a pedal against which the conjunct and disjunct movement is highlighted.



Figure 10: The violin 1 and viola parts shows the semitone changes in the contrasting directions.

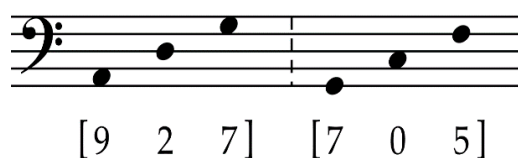


Figure 11: The cello parts in bars 4 and 10. The leaps creates different intervallic movement that compliments the other voices.

Once ordered we are left with the set [2,8,9,T] which needs to be ordered in its smallest form. This means that we must find the set in which the distance of the most outer notes is as small as possible (Straus, 2016:66). The table below shows the process of analyses.

Possible Set	Distances of outer notes
[2,8,9,T]	8 semitones
[8,9,T,2]	6 semitones
[9,T,2,8]	11 semitones
[T,2,8,9]	11 semitones

This diagram tells us that the set [8, 9, T, 2] is the smallest form in which we can order the notes. With this we can focus on the intervals of this set. We want to distinguish their intervallic content from other sets in the piece. To efficiently generate the intervallic content, we transpose the entire set so that the first integer starts at integer 12 (or as represented in the clock face as 0). In this case we have to add 4 semitones to each number in the. The new transposed set created is [0,1,2,6].

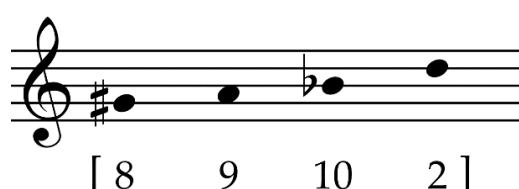


Figure 12: Once the set is ordered, one can start looking at the intervallic structure between pitches.

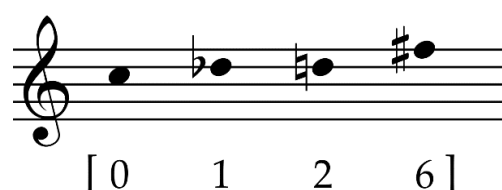


Figure 13: This is the melodic set, once transposed. In this format, the intervals are clearer to read. From the first to second note, is one semitone. From the first to third note, is two semitones. etc.

With this process complete, we are able to convert pitch class to interval class. We clearly see the intervallic content between notes as the first pitch is 0. When we analyse this now, we see that from the first pitch to second pitch, the interval class is 1. From the first note to the fourth, the interval class is 6. This now means that we can compare sets to see their pitch relation and compare it to the other sets within the music.



Figure 14: This melodic set, in bar 6, showcases the different in intervallic structure when compared to the previous set.

There are various ways that Temmingh employs his constructed melodies. Melodies may be presented through longer or shorter recurring phrases that become motto-like (Martens, 2017:138-139). These identical musical ideas are repeated throughout in a transposed interval class. The melody appears with similar patterns of interval change.

The repetition, bars 8-12 of the opening set consists of pitch class [7,8,6,9]. We apply the same principles of pitch class set theory to investigate the intervallic content of this set. When we order the set from smallest to largest, we are left with [6,7,8,9]; this set also represents the smallest distance between the outer two notes. We transpose up to integer 0 by adding 6 semitones to each pitch class in the set. Now we have [0,1,2,3]. When we compare this now with the previous set, it is evident that this second set contains different intervallic content. The notes are spaced closer in the latter set.

A final manner to ensure the most correct comparison includes using a method called ‘packing left’. This method is employed by reading the set forward and backward; this is done to see if we have symmetrical sets. The symmetrical set will take precedence over the other sets (Straus, 2016:103).

Packing left is rooted in compressing everything to its smallest interval order. The set describes the intervals in an exact manner as it occurs in the music. The smallest intervals must be kept on the left side. The order of intervals becomes increasingly important because once packing left is employed, we can extract the prime form that was used and manipulated when composing this melody.

In the case of the first melody, after the analysis of the intervallic movement and after packing left, the end result is the prime form [0,1,2,6]. We can check this prime form as it was created by music theorist Allan Forte (1973:179). In his book, *The structure of Atonal music* (1973) he categorised each possible prime form with a corresponding Forte number. We can now prove that Temmingh used Forte number 4-5 when composing this melody at the beginning of the piece. The second melody is also one of Forte’s sets, 4-1(12).

Prime Form	Forte Number	Interval Vector
(0123)	4-1	321000
(0124)	4-2	221100
(0125)	4-4	211110
(0126)	4-5	210111
(0127)	4-6	210021
(0134)	4-3	212100

Figure 15: The Forte vector numbers (Forte, 1979:179). The catalogue serves as reference point to identify melodic sets.

The final step to analysing this melody is to generate an interval class vector; this will analyse the intervallic class content in terms of its absolute content. This vector is generated by accounting for each interval present in the set. The first numeral tells us the number of intervals of interval class 1, the second numeral tells us the number of intervals of interval class 2 and so on (Forte, 1973:210). Because each prime form is already categorised by Forte, we can just refer to his vector. The diagram below shows the vector for Forte's prime number set 4-5.

Interval Classes					
1 (min 2 nd /Maj 7 th)	2 (Maj 2 nd /min 6 th)	3 (min 3 rd /Maj 6 th)	4 (Maj 3 rd /min 6 th)	5 (Perf 4 th /Perf 5 th)	6 (TT)
2	1	0	1	1	1

Melodies are either stated in its entirety by one, or more, instruments which later becomes a basis that allows for variation and extension (Martens, 2017:138; Lüdemann, 1987:170). In both cases the melody may either be presented in its entirety by one voice, or it may be fragmented throughout the various voices.



Figure 16: The extension of the [0,1,2,6] melodic set in the viola part, in bar 22.

In bar 17, Temmingh employs a motto-like figure consisting only of three notes. These three notes are evident throughout the piece and as Martens (2017:139) suggests, this figure is employed in a canonic-like structure as the same intervallic pitches are transposed throughout the voices on different beats. The viola starts this figure in bar 17.



Figure 17: The melodic found in the viola in bar 17.



Figure 18: These melodic set sets shows Temmingh's transpositions of the pitches. The intervallic structure remains the same.

Again, Temmingh highlights the semitonal movement, expressing his melodic writing through small intervallic changes (Lüdemann, 1987:171). The three notes present in bar 18, in the violin 1 and 2 parts, convert to integers [T,9,E]. These must be arranged to read in an ascending line, therefore [9,T,E]. Now we look to find the permutation of the set with the smallest distance between the outer two notes. In this case the set, as is, is already in its simplest form. To make sure we are reading the intervallic content correctly, we transpose the entire set up to start at 0. This leaves us with the set [0,1,2]. We are able to easily read the intervallic content of this set now.

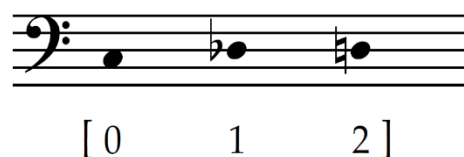


Figure 19: The arrangement of the violin 1 melodic set. It is now in ascending intervallic order.

Three features concluded from this analysis is that melody is repetitive and built with predetermined intervallic design. This short or long repetitive phrasing is characterised by semitonal movement in either an ascending or descending direction and made up of transposed fragments. Melody is often sequential and symmetrical meaning that sets can be read from left to right and right to left and the same semitone distances will be present.



Figure 20: Bars 24-25 shows the symmetry achieved through retrograde inversion.



Figure 21: The cello part in bar 23. The retrograde of this figure is found in bar 26.



Figure 22: This is the symmetry in the viola part, in bars 23 and 26.

In the *Fuga*, Temmingh is reinterpreting traditional fugal elements in his avant-garde style of writing. The subject is treated as a 12-tone row presented by violin 1. It cannot be considered a full tone row as C, [0], is doubled and Eb, [4], omitted. It changes direction rapidly, and without any unifying movement of pitch, creates chromatic alteration and isolates pitch dominance (Lüdemann, 1987:168).

The subject, which is three bars in length, can be divided into three sets. The first sets consist out of the first three notes: A, C and G#, [0,9,8]. The second set contrasts the first because of its downwards movement from the Bb, F, C, Bb [T,5,0] and the final set, that makes up the subject, are all the notes in bar 3 [2,1,7,8,0,E,4]. Alternatively, because the pitch C is repeated, it is possible to delineate between smaller sets; [2,1,7] and [8,E,4].

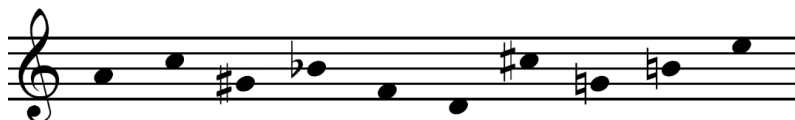


Figure 23: These are the pitches used to create the "tone row". This is not considered a real tone row due all 12 pitches not being presented.

The countersubject is built from three sets that are divided as follows: [1,2,5], [6,8,9] and [4,5,2,0]. This set is a typical example of Schoenberg-like writing as motives are divided into smaller sets (Forte, 1973:120). These smaller sets can be seen as melodic arrangements that seem insignificant on their own but contribute to the structural unit of the piece (Forte, 1973:83).



Figure 24: The three sets that make up the counter melodic set in bar 4. This set is presented by violin 1.

While the subjects consisted of leaps in various directions, the countersubject follows conjunct movement, first ascending and then descending. This type of contrast is usual in fugal practice as the architectures in motion help to differentiate the two musical structures and create a balanced polyphony in which contrapuntal texture is emphasized through the rhythmic syncopation.



Figure 25: Upwards movement illustrated in bar 11. All the voice has entered at this point.

Oblique motion is another discernible element, between the subject and countersubject, that helps lead the phrase to its high point. This movement is unusual because of the reduced independence of voice leading

The idea of segmentation means that musical formations are infinite, and the potential exists that Temmingh could have created composite segments. Composite segments refer to interactions between two or more primary segments (Forte, 1973:84). In this piece, the *Fuga* is constructed through primary segments namely the subject, countersubject, and free material. Each composite segment has a beginning, middle and end – the ending being determined by the next segment's instrumental entry.

The interactions of the composite segments places emphasis on which line becomes important. It results in helping to structure the balance of the four voices and creates a type of synergy that strives for uniformity in each section of the movement.

Temmingh further extends melodies through various types of compositional devices. In pitch class set theory, the tone row is presented in one of its traditional permutations; the prime, retrograde, inversion and retrograde inversion, sometimes with more than one row sounding simultaneously. Inversions are used extensively and are found throughout the movement.



Figure 26: The original melodic set stated at the beginning of the Fuga.



Figure 27: The melodic set inverted. This is present in the violin 2 part, in bar 28.

Other devices, such as melodic and rhythmic augmentation and diminution, enhance Temmingh's musical ideas through fragmentation. The distortion of pulse provides deviation while adding tension to the metric framework.



Figure 28: Augmentation of the melodic set in the viola part, in bar 51.



Figure 29: Diminution and retrograde in the cello part, in bar 46.

Imitation is another integral feature of the *Fuga*. Imitation creates repetition which helps the continuation and drive of the melody. Brief melodic sets are fragmented throughout the voices to build texture. Often Temmingh pairs voices together to emphasize the imitation sections.

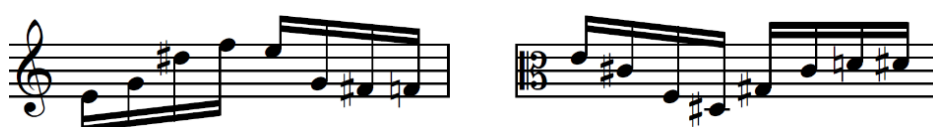


Figure 30: Imitation is found throughout the Fuga. This shows the violin 1 and viola part in bars 32-33.

Temmingh's melody writing is employed in a strategic manner that shows control and confidence in this style. As stated at the beginning of this analysis, Temmingh produces melodies in a unique manner that is characterized as his own and evident in this work. As Lüdemann states (1987:170) that melodic writing is an important element to the composer as it is his medium to create emotional impact on the listener.

4.1.3. Rhythm

The manipulation of rhythm is note-worthy when we look closely at how it is used in Temmingh's string quartets. According to Lüdemann (1987:182) Temmingh uses rhythm in a traditional manner; a manner rooted in functional harmony⁹. In this case functional harmony refers to the practice of Western Art Music. Though I am analysing using 20th century methods, it is necessary to contextualise this comment made by Lüdemann.

Temmingh has a divided output of compositions rooted in functional harmony (later works) and avant-garde/experimental style (earlier work). Even though these string quartets are of the earlier period, it is still conventional in nature when compared to his electronic music. It is within this space that the rhythm is of distinct departure from his earlier music and even though the rhythmic manipulation is an extension of his experimental period, it is still closer to the traditional understanding of rhythm.

When we look at the rhythm of *Prelude and Fuga*, we are challenged with various metre profiles. These metre profiles are a combination of a metric set and time signature. Temmingh uses the time signature as a metric framework, but the sets he composes are independent and self-sufficient. The sets do not subscribe to time-signature and vary in metric length.

These profiles, in many instances, indicate the phrase and shape of a section in the music (Christ et al., 1980:337). Metric sets are influenced by ties, rhythmical accents, rhythmic pattern lengths and proportional rhythms (Christ et al., 1980:340).

Proportional rhythm relies on a pattern that is strong, regular and that repeats (Lüdemann, 1987:183). The prelude starts with proportional rhythmical blocks that firmly establish the metre of the section in common time. The movement in the various voices help to create momentum that shapes the phrase. This type of proportional rhythm sets the listener up to expect the metre.

⁹ In this instance rhythm is rooted in functional harmony because it subscribes to the traditional role of rhythm and meter. It serves as a steady pulse and sets up a metric framework (LaRue, 1983:247).



Figure 31: Beats are strategically placed to shift on strong and weak beats to help setup the metric framework.



Figure 32: Identical metric pattern is repeated to consolidate the metric structure.

After establishing the metre, Temmingh immediately deviates and introduces new rhythmic accents. Rhythmical accents are broadly categorised in three feature groups: dynamic accents, agogic accents, and tonic accents (Smither, 1964:59). Temmingh employs all types of accents in this string quartet, in various sections, to create variety.

The violin 1 melody, in bar 14 of the *Prelude*, is an example of a tonic accent. This is because the starting note is the highest pitch in the series of notes that make up that melody. It is the pitch of this note that allows it to stand out when compared to the rest of the notes. In bar 19 Temmingh uses the tonic accent to stress the importance of the start of a new set.

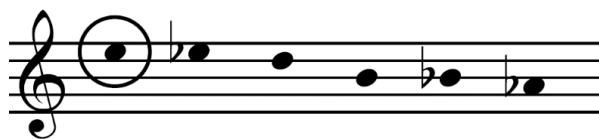


Figure 33: This is the first melodic set in the violin 1 part, in bar 14-15. The start shows the tonic accent.

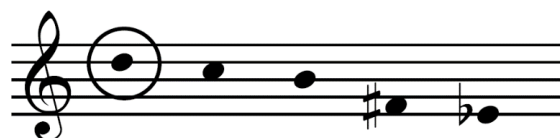


Figure 34: This is a descending set, in bars 19-20, also starting with a tonic accent.

If we consider dynamics in the sets, we also see that the Temmingh indicates the melody to be played 'ppp', which can be interpreted as an inverted dynamic accent (Smither, 1964:65). Usually, dynamic accents refer to the loudness of a note, but in this instance, we see the reverse thereof.

Another feature of the start of the set is its placement after the opening section (refer to figure 3). Temmingh purposefully starts on the third beat rather than the first to create subtle changes to the metric system presented before. While the third beat, in common time, is also considered a strong beat, it is not as strong as the first beat would be. This entry can be considered to be a weak (false) entry as it is merely written to fit within the notational framework.

Agogic accents are by far used the most in *Prelude*. This device is evident throughout all the voices and abruptly shifts the metre of the music. Agogic rhythms refer to the note length and how it functions within the set. The longer the note in the set, the more emphasis it attracts. It is in this case that time signature is divorced from the metre as the rhythms become irregular and breaks the traditional function of strong and weak beats.



Figure 35: The tie between the bar shifts the metre. The triplet adds further distortion to the metric framework.



Figure 36: The agogic accent here is emphasised by the off-beat start, and the tie.

Syncopation is a result of agogic accents. Syncopation occurs when the beats of the metric are shifted due to emphasis of specific beats. In this instance, Temmingh reverses strong and weak beats. He employs syncopation in all the voices which results in a sound world that resembles polyrhythms.

It is only at certain points that Temmingh aligns the metric synchronization. At these points we can interpret Temmingh emphasising phrase endings or possibly something resembling a cadential section. The alignment of the rhythm is also a good contrast to the previously overlapping rhythmic sections.

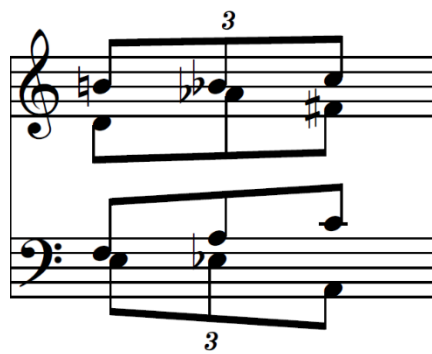


Figure 37 The alignment of metre in bar 24. This alignment has structural purpose as it resembles the end of the first section before presenting the melodic set in retrograde.

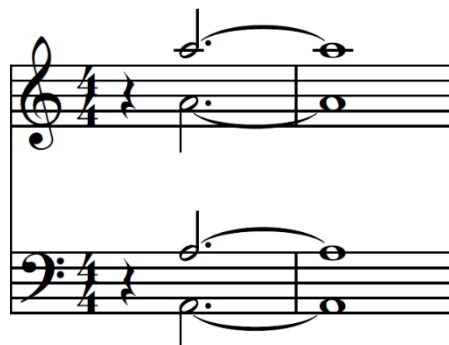


Figure 38: This is the ending of the prelude where the metric is aligned again.

When we further investigate the sets, as presented in the previous section, we come to see the rhythmical symmetry that Temmingh disguises. Rhythmic symmetry refers to a reverse rhythmic figure that repeats after it has been heard in its “original” order (Bergson in Smither, 1964: 59). Symmetrical sets are more commonly referred to as invariance (Forte, 1973:29). First evidence of this is in bar 19-21. The set [2,0,E,6,3] starts on the offbeat. The exact mirror reflection happens later in bars 28 – 30. The phenomenon of retrograde happens in all the voices. The secondary motif that is first presented in bar 18, and onwards, by violin 2 is also retrograded in bar 27 and onwards.

The next example of symmetry is on a broader level. From the beginning of the piece up until bar 24. From bar 25 onwards we see the mirror symmetry where all the sets previously are presented backwards. This happens in all the voices.



Figure 39: The retrograde that creates symmetry. The barline between 25-26 marks the middle of this movement.

In the *Fuga*, we see rhythm used to distinguish the subject from the rest of the material presented. Within the opening of the fugue, Temmingh already features certain rhythmical accents. The piece starts off with a syncopated rhythm. The lack of a strong beat influences the perception of metre. He gives direction to the subject through the agogic accent which is present in the third note of the first bar, G# [9]. After this, Temmingh uses the tonic accents to bring attention to the highest pitch Bb [11] in the set. The culmination of these rhythmical features makes this subject a dynamic statement.



Figure 40: The dynamic statement of the fugue. The ties and syncopations contribute to weakening the pulse.

One may then further look at rhythm through the primary and secondary levels as presented by Forte (1983:240) and Smither (1964:73). Both provide further insight into categorising rhythm that helps us to understand rhythm in terms of foreground and background. In each case the authors emphasize the primary and secondary rhythmic dimensions in their respective manner.

While Forte (1983:267) emphasised the analysis of rhythm in its temporal capacity, which sees duration as an unfolding event spanning over one or several bars, Smither (1964:83) identifies subjective relationship with rhythm as interpretation. He further generates a classification of rhythm that captures character properties that make them clearly distinguishable. He identifies metrical rhythm, polymetric rhythm, metrical non-metrical rhythm, and non-metrical rhythm.

The non-metrical rhythm at the beginning of the *fuga* is expanded over the first three bars. It is considered non-metrical due to the unequal and irregular beat accentuation (Smither, 1964:73). As this melody is the only pitch sounding, it is at the forefront. According to Forte and Smither's explanation, this melody exists in the primary dimension. No other material is presented while this subject is sounding.

Non-metrical rhythmic emphasis is found again in bar 58. Temmingh starts a new section with a solo violin 1 entry. This section is a variation of a fugue, a fugetta, which is dramatically different from the opening fugal subject, therefore he emphasises the start. Only after he has firmly established the rhythmic pattern, he introduces a few restatements of the subject.

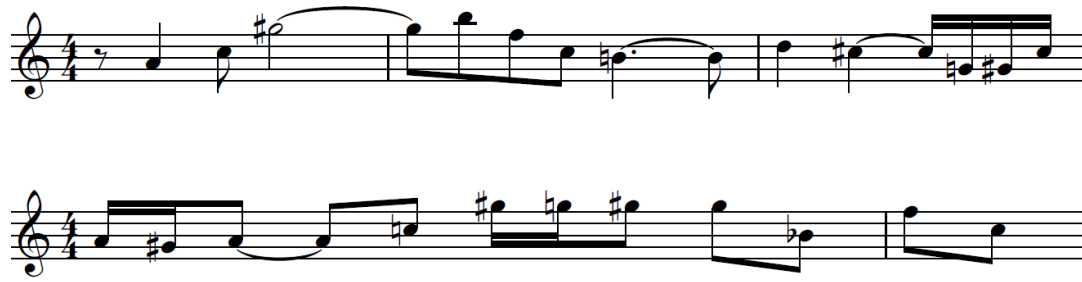


Figure 41: The two melodic sets highlighted in the *Fuga*. When these sets are presented for the first time, it is unaccompanied.

When the subject enters again in bar 4, in the second violin part, the rhythm is now moved to a secondary dimension due to the countermelody being present. With the two lines sounding together a new rhythmic pattern is created. It is this new pattern that then exists in the primary dimension and is brought to the foreground.



Figure 42: When the other voices enter, the rhythmic profile changes. The second rhythmic layer (bottom line) is now heard.

Throughout most of the *Fuga*, the rhythmical texture is dense. This also explains the strategic method when he wants to bring rhythm to the forefront. He rarely has less than two voices sounding at a time which result in the fuller texture. Smither (1964:73) explains this occurrence as a metrical-non metrical illustration that emphasises equal beats with irregular accentuation. The example below shows the alignment of the beat with the irregular accentuation in the violin 2 and cello parts (bar 36).



Figure 43: While the violin 1 and viola plays on the strong beats, violin 2 and cello are heard entering on the off-beats. This irregular accentuation gives rise to a poly-rhythmical pattern.

For a brief moment Temmingh contrasts the metric-non-metric rhythm with a metrical rhythm where all the voices are aligned with the beat. A regular accentuation is constant throughout all the voices.

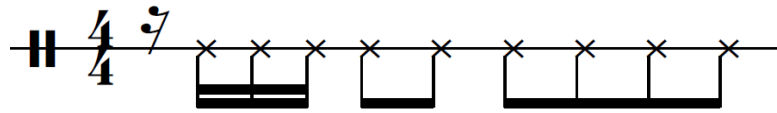


Figure 44: The alignment in bar 48. The contrast gives an opportunity to allow the flow of metre that subscribes to the time signature.

The fast and irregular contrast used in the *Fuga* is an expansion tool that contributes to the development of his musical subject and phrase. This strategic method of writing allows Temmingh to develop the rhythm of the subject to become varied throughout the piece. In each phrase, up until bar 57, there is always a familiar passage that can be compared to the subject stated at the beginning.



Figure 46: Rhythmical variation extracted from the beginning of the subject, played by violin 1 in bar 47.



Figure 45: Variation on the rhythmic and intervallic elements of the subject from the viola part, in bar 34.

After bar 57, a new section is introduced. This section is characterised by harsher rhythmic accentuation. Temmingh achieves this through tempo indication and rhythmic coherence of the voices. After all the voices have introduced the subject, it seems that the voices start to conform until bar 69 where they are clearly divided into two contrasting lines; violins 1 and 2 represent the first rhythmic line while viola and cello represent the second rhythmic line.

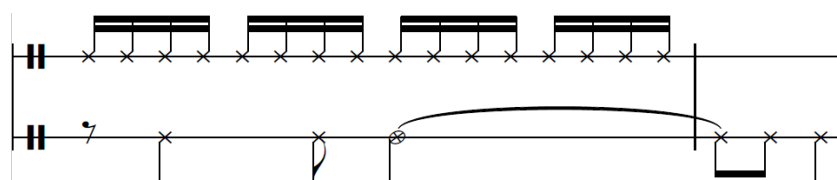


Figure 47: The two rhythmic lines created in bars 69-73. Violin 1 and 2 are paired (top line), while the viola and the cello plays together (bottom line).

A brief transition returns the listener to the original off-beat rhythmic pattern that is heard at the beginning. The violin 1 is heard alone again, showing us that Temmingh wants to bring the rhythm to the forefront again. Up until the end of the movement, Temmingh proceeds to have the same rhythmical accentuation.

It is the combination of rhythmical fluctuations that contribute to the dynamic contrast of foreground and background rhythm. Just as Forte (1983:267) suggests, the rhythm is associated with pitch events. This means that with fewer pitch-classes in a set, the simpler the rhythm pattern. Juxtaposing this stands that when the set of pitches becomes longer, the rhythmic structure becomes more complex.

4.1.4. Harmony

According to Bergman (in Belkin, 2003:11) harmony is an amalgamation of intervals and chords that are organised in a strategic manner that results in a passage of successive progression. This progression acts as the guide that leads the listener through the piece. Psycho-Acoustical research supports the notion that the progression is not always intended to be the guide. This theory, closely associated with functional harmony, is limited when it must express the harmonic progression in 20th century music (Belkin, 2003:6).

When looking at Lüdemann (1987:175), he problematizes the way in which Temmingh uses harmony. He concludes that there is no definite methodology in which harmony is treated; it is neither tonal, nor fully serial. According to Lüdemann (1987:176), there are certain patterns that are revealed in Temmingh's writing that correlate harmony and progression in his more tonal style of writing. This leaves the space to investigate how we could interpret the harmony in his prelude and fugue.

Christ et al. (1981:355) presents their viewpoint of harmony of the 20th century as an evolution of sonorities that are new because of the context that it is placed in. The incorporation of tertian chords are heavily highlighted and the starting point for Christ et al. (1981:356). They further conclude that while tertian chords are the remains of earlier, more traditional harmony, the use of non-tertian chords was a phenomenon that provided a wider sonority of harmonies.

It is in this non-tertian harmony that we aim to find an appropriate analysis of Temmingh's Prelude. We specifically look at secundal harmony¹⁰. Secundal harmony refers to chords that are constructed with an interval of a second. It is more often referred to as tone clusters (Christ

¹⁰ The term, synonymous with Henry Cowell, has vague origin but since its popularisation in 1926 it has made harmonic innovations (Hicks, 1993:432)

et al., 1981:361-362; Lüdemann:176). While mostly used as passing sonorities, according to Cowell (in Hicks, 1993:428), it is able to juxtapose melodies and create superpositions of two musical layers.

This type of harmonic practice is generously used throughout the prelude. The two lines that Temmingh creates are closely related to the explanation of Hicks (1993:429). Violin 1 carries the leading melodic material for much of the work. All the rest of the voices share fragmentation of melodic material that are dispersed and broken up to fit into their respective sets. The melodic fragmentation, when analysed vertically, makes use of secundal harmony.



Figure 48: The violin 1 melodic set accompanied by secundal harmony. The secundal harmony is provided through fragmented sections from the violin 2, viola and cello voices.

The cluster chords foreshadow this secundal harmony that becomes one of the fundamentals of this movement. With each voice moving up or down a semitone, the cluster becomes fuller until it reaches the peak. The peak of the cluster is reached in bar 4. After the cluster has peaked, the cello leads the voices into the next cluster set that peak in bar 10.



Figure 49: The climactic points in the exposition of the prelude. The harmonic make-up is made of 2nd intervals.

After the violin 1 statement of the melodic set, in bars 14 – 15, the secundal harmony is present in a coordinated manner. Bar 16 shows the voices that Temmingh pairs together to create his harmony. Violin 1 and viola are paired together while violin 2 and cello are paired. This pairing is done to still have polarity in place that creates tension and gives contrast. The two violins, with the higher registers, are paired with one of the lower register instruments respectively which creates the sonic perception that the tone cluster covers a larger range.



Figure 50: Secundal harmony being created by the violin 1 and 2 interaction in bar 16.



Figure 51: The violin 2 and cello part in bar 16.

This pairing is one manner in which Temmingh demonstrates his two musical layers. Another way that he achieves musical layering is through the clear divide in material between the violin 1 and the rest of the string quartet. It is seldom that any of the other voices presents foreground material that contests the violin 1 part. It is only at the end of the piece, in bar 41, that the cello starts to indicate the closing of the piece with a short solo.

Pitch class set theory cannot be divorced from harmony as it is a contributing factor to the individual lines of each voice. The construction of sets occurs within the framework of the voice in its independent state. This means that harmony can also be analysed in a linear manner. Linear harmony reveals the constructions of the sets that Temmingh creates and his strategic rhythmic placement of each set.

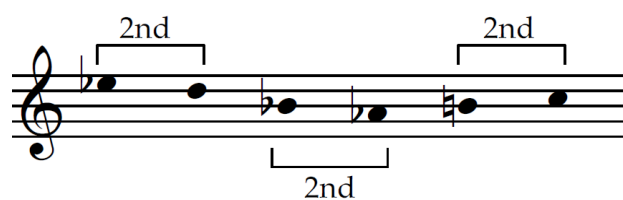


Figure 52: The construction of the melodic set in bars 14-16. Intervals are constructed of 2nds.

As Wilson (1992: 29-30) describes symmetrical form, the idea of retrograde progression is highlighted as an innovative way to create expressive music that would not be otherwise allowed. Symmetry allows the possibility of textural manipulation and development of progression. Temmingh uses symmetry in a structural manner to notify the closing of the movement.

In *Fuga*, harmony is approached in a similar but more traditional manner. In this movement Temmingh uses the fundamental structure of the Fugue to guide the harmony. Drawing from

this composition genre, the fugue begins with the introduction of the subject. Because the subject is sounding alone, we are able to focus on the linear harmony that Temmingh writes. The extended three-bar subject is built from a predisposed tone row. The composer arranges the chromatic notes in a way that emphasises non-diatonic movement. This subject becomes the template on which other counter motif and episodic material will be based on.

When the subject is reintroduced by the violin 2, it is dominant. While we are in the realm where there is no tonal hierarchy, we are able to see the transposition of the subject. It is transposed up by an interval of a fifth. This use of functional harmony guidelines in this fugue highlights the traditional construction of this movement regarding harmony.



Figure 53: the original set (right side) and the transposed set (left side) a perfect 5th higher.

As theoretical practice dictates, the subject must be presented by all the voices before any developmental processes can begin. Thus, the subject is stated again; this time by the cello in bar 7. Four bars later, in bar 11, the answer is transposed a perfect fifth scale degree higher again. Due to the lack of tonality, the answers that Temmingh writes cannot be considered real or tonal.



Figure 54: The entries of the cello (bar 7 and viola (bar 11).

Accompanying the answer, in bar 4, is the countersubject. The countersubject can be considered a secondary theme. It is prominent throughout the movement but is still subordinate to the subject (Walker, 2001:1). The entire tone row is used to construct the countersubject.



Figure 55: All the pitches in the countersubject can also be found in the opening subject.

Because both the subject and countersubject are rearrangements of the tone row, we look at the intervallic progressions that Temmingh writes. When looking vertically at the harmony, it is clear to see that each chord inherently belongs to a different structure. If we consider the violin 1 and 2 material from bar 4 onwards, we deduce that Temmingh used cluster- and polychords.

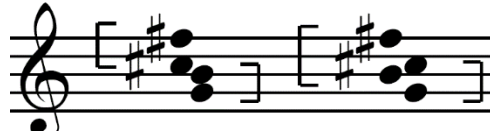


Figure 56: The various ways to analyse the harmony. In each case the intervallic build creates various types of intervals.

This relationship between subject and countersubject is similar when it reoccurs in the viola and cello lines in bar 11. After their statements, in bar 14, the exposition of the fugue comes to a close. According to both Christ et al. (1981:188) and Walker (2001:1), there is no standard procedure on how to treat the countersubject from here onwards. Temmingh continues to imitate his initial exposition and maintains the rhythmical and harmonic structure. This allows him to facilitate the natural development of the thematic, textural, and harmonic transformation until bar 30.



Figure 57: Development of the fugue occurs as rhythmic changes occur to original set.



Figure 58: Here the countersubject is inverted. Viola plays this in bars 28-30.

From bar 31-34, Temmingh employs a canon that is only one bar in length. It is succeeded by each voice from violin 1 to the cello. The harmony accompanying the canon are cluster chords. These chords can be seen as a unifying element between the movements.



Figure 59: The cluster chords that accompany the violin 1 melodic set in bars 31-32.

In bar 37 we see the first emphasis of quartal harmony. The harmony is reinforced with the soprano-bass polarity method; a characteristic commonly associated with the Baroque genre. The two outer voices are creating the fundamental while the two inner voices sound a fourth interval apart.



Figure 60: Quartal harmony is created from the inner voices (violin 2 and viola) from bar 37 onwards.

The final section of the fugue is total contrast in harmony as it is imitative in pitch and rhythm. A two-bar dialogue between violin 1 and 2 provides the last secundal harmony before the voices are used in unison harmony. Notably the cello ends the movement alone. This texture of harmony is directly comparable at the beginning of the prelude.



Figure 61: The return of secundal harmony at the end of the fugue. This is also an example of symmetry on a smaller scale.

4.2. *Strykkwartet no. 1*

4.2.1. Form

Christ et al. (1981:398) references three broad categories of composers and their implementation of formal structure. The first group uses form in their compositions to serve the stylistic need of the individual. Composers such as Hindemith and Bartok are mentioned. A second group makes use of novel means in their organization. While their compositions adhere to broader structural outlines, they find a broad collection of compositional techniques. Ives and Stravinsky are highlighted here. The final grouping looks at composers that have renounced any organizing principles in favour of serial methodology.

Temmingh is a mixture of all three of these groups. This is based on the structural decision made in *Strykkwartet no. 1*. Formal punctuation is found when sections operate together to mark an ending in the music. Temmingh does not use cadential movement as we would expect as in functional harmony, instead he uses less conspicuous formal contrasts in texture, rhythm, tempo.

We will first look at the macro structure that Temmingh set in place. Regarding form, the first movement is a through composed set of sections. While repetition creates form, repetition is sporadic in this movement. The lack of consistency is one of the defining features that separates this one from the other two.

Major sectional division is found when the time signature changes. The change in time signature is a manner of creating a different meter. Each section has its own melodic sets that relies on rhythm that makes the section identifiable. With the insight of Persichetti (1961:83) and Christ et al. (1981:245), each succeeding section has its own flexibility in patterns, and this becomes the method for continuity.

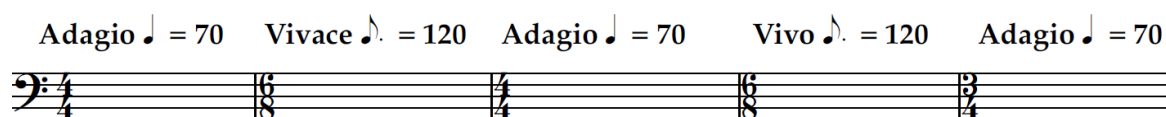


Figure 62: The abrupt change in tempo shows division of sections on a broader level.

There are clear section divisions through the use of formal punctuation. When we look at the texture, we see that Temmingh contrasts textures to move from one section to the next. The transition from bar 40 to 41 highlights this contrasting texture from many voices to just the cello. In the following transition, bars 58 – 60, Temmingh moves from one voice to many. This

trend continues throughout the entire first movement. Texture is only one manner, but texture is accompanied by time signature changes that assist in division of sections.



Figure 63: The solo cello is used to contrast the fuller texture, which leads the music into different sections.



Figure 64: The section ends because of the change of time signature.

Accompanying time signature changes are tempo indications. These markings are of relevance because it delineates sections on a macro level. When we see tempo markings placed with a change in time signature, it is a division in structure on a macro level. In some instances, Temmingh does change time signatures but with no tempo indication. These sections are deemed to be within a larger section and therefore regarded as part of the music on a micro level.

The remaining two movements are unique in their structure, with only a few differentiating features. The second movement is closely modelled after the classical sonata form. The sections are clearly identifiable by exposition, development and the recapitulation and coda (Christ et al., 1981:228). The distinctness of each section can also be highlighted through time signature changes. This, again on a macro level, shows us where one section stops and a new one starts.

While the classical sonata form has been established in its own right, many variants of this pattern exist (Christ et al., 1981:245). The biggest change in patterns lies in the omission of bridge passages for Temmingh. This bridge is usually found in the exposition and the recapitulation. Christ et al. (1981:229) states that the bridge is a connection point that helps the principal theme move seamlessly through to the subordinate theme and closing theme.

Temmingh does not have these bridges, and this results in his sonata form variation being short with sudden movement from one section to the next. This fundamental characteristic aside, Temmingh also does not use the functional harmony expected in a classical sonata form.

The final movement proves to be tricky to categorise regarding formal structure. While the repetition of the melodic sets are present, they do not follow any concise structure or pattern. In this regard this movement is considered a structural innovation that contributes to making this composition uniquely Temmingh.

The first type of section division is seen in bar 42. In the manuscript score, the double bar line is a method of ending one section and starting another (Christ et al., 1981:400). When compared to the previous movements, this method seems out of place and departs from the general methodology that Temmingh has used thus far.

The following section, bars 43 – 84, introduces new melodic sets. These sets progress back to the restatement of the exact opening set. When considering just these three sections on a macro level, we are able to categorise this as ternary form, section A spanning from 3 – 42, section B from 43 – 84 and repeat of section A from 85 – 104. Following this we see Temmingh extending the structure through more repetition on the melodic sets as found at the start. Repetitions of this nature occur up until bar 151.



Figure 65: The ABA structure is made up of these two sections.

The most significant difference that we see in this movement is the extension material past bar 151. Bar 152 a fermata is used to give space to separate the last few sections. This methodology is another novel occurrence only found here. The remaining two sections are excerpts taken from the previous two movements. Notes from the first melodic set in the first movement are presented in bar 153 – 158. After this we are presented with the violin 1 melodic set from the first movements.



Figure 66: The closing of the final movement is cyclic because of the quotation of the melodic sets from the previous two movements.

This new innovation in structure showcases the sectional character that Temmingh demonstrates. With an arch-like design, the thematic and melodic tension has different considerations that lead some sections into the next. Described as static by few, the different sections still propel forward through the use of micro-movement within the static context. These features highlight the composer's ability to connect form in an interesting manner that combines texture, rhythm, and tempo.

4.2.2. Melody

Five years prior to *Prelude en Fuga*, Temmingh wrote *Strykkwartet no. 1*. The notable difference between melodic sets in this string quartet is the octave displacement used. The first melodic set, in the first movement, occurs in bar 3-4. When converted to integers, the set only consists of pitch class [6,7,9,8]. This set can directly be compared to each of the following melodic sets that occur in bars 10-11 and throughout the opening of the first movement. The melodic set in bars 6-8, is slightly adapted and extended.



Figure 67: Once the octave displacement is ordered (left side), the melodic set (right side) can be extracted.



Figure 68: The melodic set is extended by one pitch in bar 6.

All of these sets correlate with a Forte vector. When we use the clock diagram, and pack-left the sets are reduced to the same fundamental vectors as presented by Forte (1973:179).

Melodic set	Packed left	Forte vector name
[6,7,9,8]	[6,7,8,9]	4-1(12)
[1,2,4,0]	[0,1,2,4]	4-2
[6,5,0,T,E,9]	[5,6,9,T,E,0]	6-Z50 (12)

Violin 1 presents a new set in bar 8. This melodic set is made up of eight notes – these eight notes are complementary sets because they make up one coherent set. The entire set reads [8, 3, 4, 9, 7, 5, 6, 4] but is split into smaller subsequent sets. This technique of set construction is more commonly found in this string quartet. The same set is found later in bar 16 by violin 1. Another complementary set is played by violin 2 and viola in bars 14 and 15, respectively. These sets are different because they are inversions of the previous sets.



Figure 69: New melodic sets presented by violin 1 in bar 8.



Figure 70: The violin 2 voice presenting a transposed set. The second half of the set is inverted.

Later in the work, bars 76 – 79, Temmingh uses this set in a canon. The cello presents the set first. The viola then plays the transposed set. When violin 1 and violin 2 have their turn to play the canon, it is inverted.



Figure 71: The melodic set used in the canon from bar 76 onwards.

This eight-note set is developed and becomes extended from bar 100 onwards. The entire section is marked *marcato*, which is characteristic of this set. The set is adapted in various manners; Temmingh starts with the violin 1 and 2. Just one bar later the viola and cello enter. Each voice presents the sets on different beats. By doing this, Temmingh is creating the illusion of the set becoming longer when in reality they are overlapping.



Figure 72: The overlapping of voices creates one long set. This is how Temmingh creates compound sets.

Another way that the set is extended is through fragmentation. Bar 103 marks the first fragmentation happening between violin 2, viola and cello. It continuously becomes fragmented as each voice plays only one or two notes of the set. The final extension of the set

occurs in bar 112. Here the eight-note set has changed from being leaps away from each other to becoming semitone steps.

Later on, in bars 41-43 of the movement, Temmingh constructs another complementary set, this time in the new time signature. This complementary set is fundamentally different because of its construction: instead of breaking up the set into equal parts, as with the previous example, this set is intertwined to create a superset, as described by Forte (1973: 124). When extracted, both sets are sequential in nature, descending in a stepwise manner.



Figure 73: In this superset the pitches are mixed. The two set that make up this superset is [0,9,11] and [0,2,3].

The opening statement of violin 2 in the second movement demonstrates Temmingh's usage of transposition to greater effect. The first set in bar 1, in normal order [0,2,3,9,T], is transposed throughout all the voices. This set, first presented by the violin 2, is transposed only a few bars later in the violin 1 part. This transposition of the pitch class integer means that we must use modulo 12 to check if the set can be reduced to the same cardinal number, i.e. – the same interval set number.

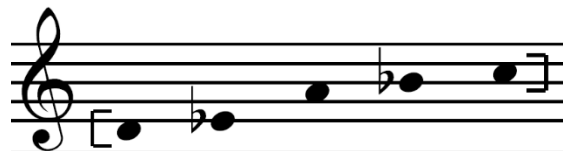


Figure 74: This is the original melodic set in bar 1 of the second violin part.



Figure 75: The second melodic set, also presented by the violin 2 voice.

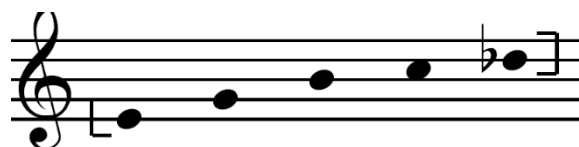


Figure 76: This is the transposed set played by the violin 1 voice in bar 5. The melodic set is transposed up by a major 2nd.



Figure 77: The viola also presents a transposed melodic set, a major 3rd above the original. This set is presented in bar 9.

Further investigation shows that this set forms part of a larger structure of supersets as presented by violin 2 (refer to figure 68). Each bar (bars 1, 2 and 4) is constructed differently and are the fundamental sets in this movement. Temmingh transposes each of these sets throughout the various voices. These collections of sets are restated in the recapitulation in bar 74 – this time with the viola presenting the sets. Temmingh employs the exact same transposition technique as earlier. Once each voice has stated the set, in a transposed version, the piece comes to an abrupt close.

The middle section, Quasi-Allegretto bars 39-77, is a brief character change from slower lyrical melodic sets to faster rhythmically driven passages. The various voices are treated individually, and, in each part, the melodic sets are made up of semitone intervals. The melodic set consists of just 2 pitches which are transposed throughout the voices. The rhythmic structure employed creates a unified feel in this section.



Figure 78: Secundal harmony is used to build linear melodic sets. The violin 1 and viola voices creates this type of quality when harmony is analysed vertically.

In the third, and final movement, melodic sets only consist of an ascending and descending line. It is scale-like in nature, mimicking an F# pentatonic scale. Temmingh uses fragmentation as a method to develop the set. The first melodic sets are presented by the viola and cello, in bars 3-4. The set becomes gradually introduced by all the voices until the entire string quartet plays the set from bar 9 onwards.



Figure 80: Influence of the pentatonic scale in the melodic set.



Figure 79: The last three notes are the pitch fragmentation that Temmingh uses. Some fragmentation sets use rhythmical elements while other sets use pitch fragmentations.

When comparing the treatment of pitch-class sets, this movement is unique. Temmingh does not transpose his original set once throughout this entire movement. When the set is presented, it is always in the original (prime) form, as heard at the beginning of the movement. This unique

treatment of the material perhaps points to some deeper musical reflection or significance for the composer, especially considering that he uses this exact figure several years later in his violonsonate (completed in 1993).

Temmingh might not have transposed this set but clear adaptations of the set are visible throughout. The first variation occurs in bar 11; the three-note set is transformed into a symmetrical inversion of intervals. This inversion is then moved around through the different voices.



Figure 81: Symmetrical inversions are found throughout the final movement.

A combination of transposition and fragmentation are frequently used as bridging passages in this movement. The first fragmentation of the set is found in bar 24 and stretches over 3 bars. This bridging passage leads into an exact repetition of the sets as presented in bar 3. Temmingh uses this method again to link passages in bars 82 – 84 and 99 – 102.

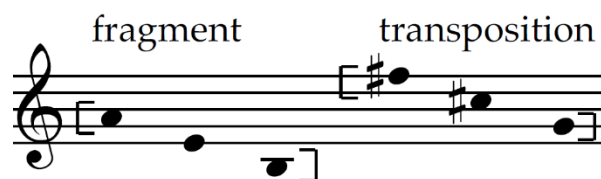


Figure 82: These melodic sets [4,9,11] (left side) and [0,6,8] (right side) used as bridges between passages.

As previously mentioned, Temmingh constructs melodic sets differently; we see that some melodic sets do not rely on pitch as strongly as before, instead it relies on the manipulation of rhythm that results in a melodic set. This type of set will be discussed in detail in the next section of this thesis.

4.2.3. Rhythm

Throughout each movement, Temmingh relies on rhythm to create rhythmic grooves that add variation and contrast to the way that sets are constructed. In the first movement, the opening bars are examples of a repetitive rhythmic pattern that forms a set. This set consists of just 2 pitch classes. This two-note set is presented by the violin 2, viola and cello in a transposed manner.



Figure 83: The melodic set is made up of two pitches and transposed throughout the voices.

The constant change of time signature serves as evidence that Temmingh, in this string quartet, clearly divides time signature and metre. In each movement, the rapid time signature changes accompany the adaptation of the set and creates contrasting metric phrases.

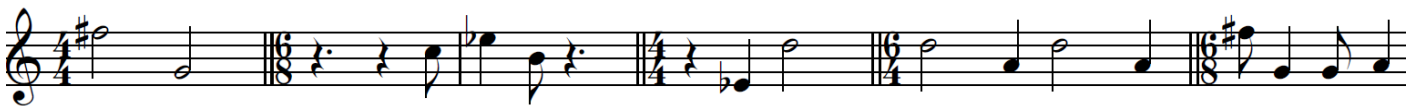


Figure 84: Changing time signatures creates divide in the flow of metre.

When analysed in a linear fashion, rhythmic sets become a prominent figure that creates unity. The violin 2 part will be used as the general example to demonstrate these rhythmic sets, in the first movement. Bars 1-4 shows the span of the rhythmic set. This set is transposed repeatedly in short intervals. This process starts anew in bar 27 – this time the rhythmic sets being presented by violin 1, violin 2 and viola.



Figure 85: This the most prominent rhythmic features in the first movement. From these rhythmic patterns, variations are created to maintain rhythmical interest.

This two-note set is then again found in the Vivace section - bar 41 - of the first movement. The set is similar regarding the amount of pitch classes but differs because of the metre framework. Temmingh is able to create a syncopated rhythmic groove through the strategic change of time signature.



Figure 86: The rhythmic groove that is created is based off the 2-pitch rhythm as heard at the beginning of the movement.

Temmingh creates unification of this movement by using this rhythm, in a varied format, through the entire movement. Even when the time signature has changed, the metric structure is used to create a rhythmic pattern that is familiar to the listener.

The second movement shows Temmingh's balance of rhythm and his meticulous attention to repetition and how he uses it. Contrasting the first movement, Temmingh uses time signature to build repetition. This has an effect on the melodic, which explains the canonic-like repeat of the melodic set.

The constant changing time signatures are part of the rhythmic appeal in this movement as it creates the feeling of unending phrases that are extended continuously. The cyclic pattern is a carefully constructed change between 5/4 and 6/4. Each time the cycle repeats, another voice enters with the same rhythm as heard at the beginning. When added, the layering of the individual voices creates a rhythmic pattern that has developed far from what was heard at the movement's opening.

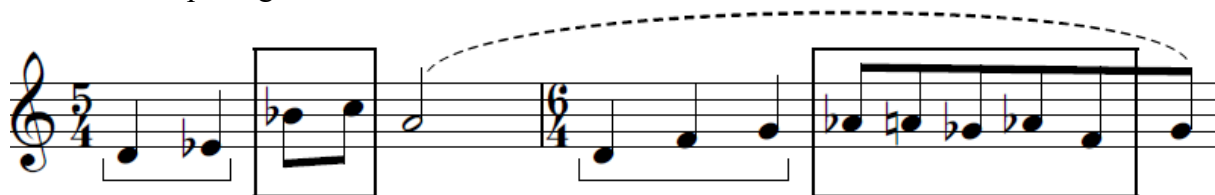


Figure 87: Phrases are extended and carries over. The dashed line shows the end of the phrasing. The underscore and box show the development of sets to create different rhythm.

In bar 78, we return to this treatment of rhythm. The viola starts with the melodic set instead of violin 1 in bar 78. Temmigh rebuilds the layers of all the voices one by one so that the texture becomes fuller. He then uses the cello, in bar 93, to emphasize the last phrase of the opening melodic set to indicate the end of the movement.



Figure 88: The cello returns to the rhythm s presented at the beginning.

The final movement of Strykkwartet sees Temmingh using rhythm in a more simplistic manner. Rhythm is, for most part, similar throughout the voices. This method places emphasis on the melodic set used in this movement; each time the melodic set repeats, one voice is added with the same rhythmic pattern. The treatment of rhythm in this manner makes this movement unique due to the repetition and the foreground role rhythm plays.

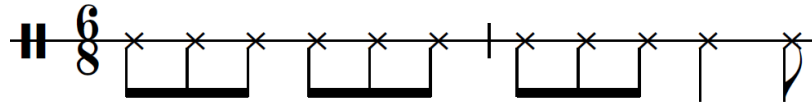


Figure 89: This is the rhythmic pattern that the final movement is based on.

Equal division of beats contrast the previous movements' more complex relationship between time signature and metre. Christ et al (1981:340) mentions that complexities are achieved through constant changing and multiplication of basic durations. This does not happen here.

We often see fragmentation of rhythm, as in bar 24 – 26 and later in bars 82 – 84. Besides this fragmentation, we never see rhythm being developed as in the previous bars. The voices often double or are in unison.



Figure 90: This is the fragmentation of the melodic set refer to figure. This is found throughout the movement in this format.

In bar 34, we see the first independence of rhythm. Violin 1 presents the melodic set while violin 2 and viola takes on an accompaniment role, which has greater dependency on the violin 1 line. The cello plays a pedal point that lasts for the entire section, until bar 61, before the voices return to their co-dependant state.



Figure 91: This is the first rhythmical layer, presented by violin 1 in bar 33.



Figure 92: Violin 2 and viola plays augmented melodic sets, which create the second rhythmic layer.



Figure 93: The cello plays a pedal point on C (integer 0). This is the third rhythm layer.

4.2.4. Harmony

Straus (2016:174) provides insight on the post-tonal treatment of harmony that places emphasis on voice-leading principles. These principles describe the abstract movement from one set to the next through transformational voicing¹¹.

When we look at voice-leading in the first movement the violin 2, viola and cello seem only connected through their rhythmical properties. With further investigation, we can highlight the transpositional character that Straus makes mention of. Semitonal movement between the first two notes, present in all the voices, become the transformational voicing that progresses through the open few bars.

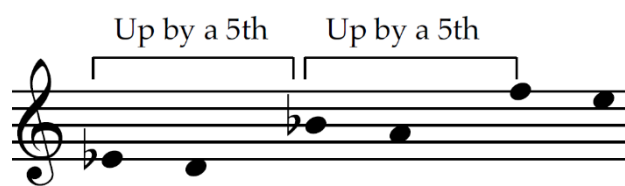


Figure 94: Transposed intervals, perfect 5th, that creates the opening structure harmony in the first movement.

Violin 1 mimics this voicing continuously throughout the exposition. Each time the other voices present their new transposition of the semitonal movement, violin 1 emphasizes it through rhythmic augmentation. In bars 20 – 23 a canonic emphasis further highlights this idea of transformational voicing.

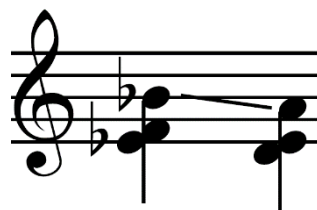


Figure 95: The rhythm found in the accompanying voices. Semitone movement is used.



Figure 96: The violin 1 plays augmented rhythms, but the semitone movement is the same.

While Straus (2016:174) emphasises the role of voice-leading, Persichetti (1961:62) rather focuses on register. According to Persichetti (1961:62) the quality of the harmony is defined through placement of pitch class. This alters the overall sound of each line individually and together.

¹¹ Transformational voicing results from harmonic transformation through transposition and inversion. This creates pitch-class counterpoint (Straus, 2016:174)

Temmingh applies this to various extents throughout Strykkwartet no. 1. The opening of the Strykkwartet is written in the lower registers that creates a darker atmosphere. This is contrasted by the violin 1 register, which is placed in a higher register. Placement like this creates a clear emphasis on the melodic sets versus accompaniment passages.



Figure 97: The register influences the sound created. Violin 2, viola and cello is playing in a relatively low register.



Figure 98: The violin is playing a relatively high register.

Persichetti (1961:63) also speaks about vertical texture that, when combined, creates compound formations. These formations are described as mixed intervals that are not arranged in a polychordal setting. Context of such chords are determined through their lack of progress to a tonal sphere. Movement one opens with these compound formations, which can be tracked throughout this movement.



Figure 99: The same pitches succeed each other, creating a lack in progression.

Movement two treats compound formations differently. Harmony is mainly achieved through the layering of voices which plays the melodic set in canon. The best example of compound formation is in the Quasi-Allegretto section, starting in bar 40. The violin 1, violin 2 and viola lines are arranged in a combination of inner graphic¹² that results in the tension of harmony. This complexity of the inner graphic means that construction of harmony relies strongly on the balance and sonority of intervals and its register (Persichetti, 1961:55).



Figure 100: This is the rhythmical set that is created when all the voices are added. This rhythmical is fragmented and layered to create harmony.

¹² Graphic plans refers to the construction of harmony through the literal focus of individual line movement rather than consideration of intervallic tensions (Persichetti, 1961:55).

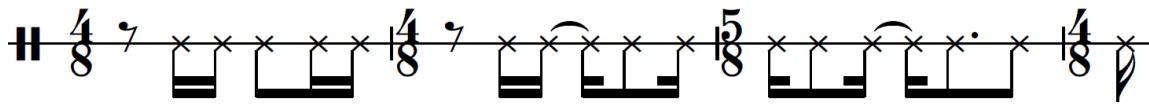


Figure 101: This is the greater rhythmic structure when all the voice parts are considered.

Throughout this section, parallel movement between rhythm is used. The intervallic transposition between the voices creates a soundscape that highlights poly-interval direction of the music, which results in ambiguity of direction. The rhythmic unity is a fundamental that keeps this section coherent.



Figure 102: Parallel harmony is key harmonic characteristic in the third movement.

In the final movement, Temmingh makes use of parallel harmony¹³. Although he also uses it in the previous movements, we see an incomparable usage of parallel harmony in this final movement.

The opening of the movement is a brief insight into this use of parallel harmony. Bar 3 – 7 is a gradual build that soon introduces the violin 2 and then violin 1 until all the voices are sounding at the same pitch, octaves apart. This showcase of parallel harmony emphasises the rhythm while creating direction in the music. According to Persichetti (1961:73), such harmony is used to achieve colour and textural contrast.

The general movement of the opening passage is upward in motion. This aids the phrasing and fanfare flourishes that project rhythmic variants in a cyclic style. In bars 24 – 26, we see fragmentation of parallel movement descending.

Temmingh uses a mixture between real and tonal parallel harmony. Real parallel harmony means that the intervallic structures are identical in construction (Persichetti, 1961:64). Horizontal lines are the primary focus so that it is easier to compare voices. (Persichetti, 1961:59). Bars 20 – 23 shows the horizontal consideration between violin 1 and 2. Similarly, in bars 33 – 38, violin 2 and are compared. Tonal harmony refers to the preservation of tonality.

¹³ When voices move in the same direction in a succession of chords (Persichetti, 1961:61).

Although tonality cannot be achieved in this piece, Temmingh uses a variation in which he constructs the intervals through vertical consideration. The violin 2 and viola shows this in bars 111-118.



Figure 103: Real parallel harmony is found in the construction of melodic sets in bars 20-23. The intervals are exactly the same.



Figure 104: This type of movement is considered tonal parallel harmony because the intervallic construction is different.

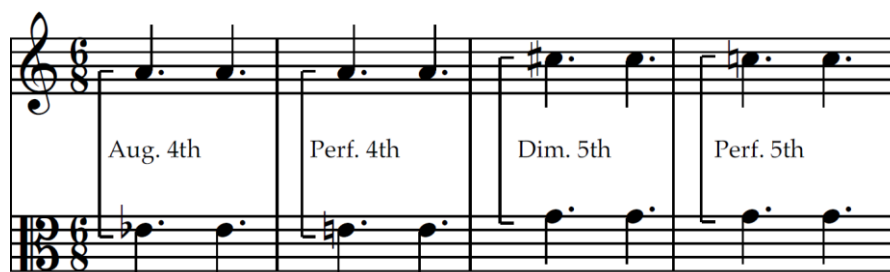


Figure 105: This is the vertical consideration of harmony. Intervals are varied which breaks the parallel movement.

Temmingh achieves a great scope in his harmonic writing. The quality of dissonance is emphasised through harmonic tension that enables his chords to function in a complex relation between compound formations, parallel harmony, and textural variety.

5. ARTISTIC RESEARCH AND PERSONAL REFLECTIONS

5.1. Performance considerations

The act of performing is a culmination of paradigm networks that informs the choices made in any composition (Borgdorff, 2012:18). Players possess tacet knowledge of musicality as well as various contextual knowledge that acts as agents that inform the practice (Borgdorff, 2021:39). The goal then becomes to use these various networks to create an informed and musically sound performance.

(In this section of the thesis, I employ first-person writing to reflect my personal experiences and engagement with the two string quartets.)

As my previous analytical explorations showed, the Temmingh string quartets are placed rather squarely in an avant-garde sphere as music that highlights the conceptual framework between melody, rhythm, harmony, and form. Each of these elements adds dimension and potentially infinite consideration when performing the music, or preparing for a performance (as, indeed, they do in any kind of music). In this section, I will briefly discuss the entry points used when preparing both works for performance.

The melodic sets constructed make use of intervallic steps and leaps that would not necessarily be considered idiomatic for string instruments. Because of this, pitch and intonation become highlighted as challenging components of the music. Added to this, the interval relationships between the voices add further difficulties to musical performance and interpretation, as intonation, isolated within an individual player's part, might not be compatible with intonation in the rest of the ensemble. This appears to be a challenge in any atonal or nearly atonal compositions, where voice-leading within a part might imply a tonal framework when in reality no such hierarchy exists. With no tonal guidance, pitches can become disjointed and coherent musical phrasing can become challenging for even experienced players. The lack of a tonal centre means that each player must possess secure relative pitch abilities, while maintaining an active and sensitive aural connection to the ensemble.

Rhythm is complex due to the various layers that Temmingh creates. Ensemble work relies on the emphasis on strong beats to maintain the metric structure. Even though the time signature is 4/4, the melodic sets and their respective rhythmic lengths vary. In bars of rhythmical

alignment, Temmingh uses homorhythmic writing to reinforce metre to create a string rhythmical identity.

Articulation presented in the edited score is a re-interpretation of what Temmingh suggests in his music. Temmingh is oftentimes inconsistent with bow markings, which in rehearsal lead to confusion amongst the ensemble members. To overcome this, I identified musical sets that are similar in pitch movement, vector class, or rhythm, grouped them together and articulated them in the same manner throughout the ensemble. This creates a unified sound that provides direction and uniformity in the music while avoiding confusion within the ensemble. With clear articulation in place, passages can more easily be contrasted or blended in performance.

The most challenging feature of both string quartets were the dynamic structures that were needed to create emphasis on the lead voice in any given passage. In order to achieve successful dynamic balance, the function of each voice needed to be considered. This helped the ensemble to correlate dynamic markings. The edited score presents the results after the ensemble worked and practiced.

5.2. Engraving

When interpreting music, musicians draw from many spheres to create an informed practice. This aims to produce a result that simultaneously adheres to the instruction given by the score while being fluid enough to allow for musicological insights. In this regard, I approached the engraving process with careful attention paid to musical and technical aspects.

My departure for engraving started with the inspection of the original Temmingh scores, after approval was given by Liezl-Maret Jacobs, the curator of Temmingh's archive. The score, which was only available in hand-written manuscript form, proved to be a challenge to read and was not well-suited for performance in its original form. Additional problems arose as there was a lack of individual parts for the instrumentalists.

I undertook the original engraving myself. The score was taken as is and engraved with no editorial interventions from my side. All inconsistencies were documented and discussed with various performers, composers, and colleagues from the Stellenbosch University music department. This crucial first step was needed to create a legible score to use during rehearsal, performance, and to some extent also analytical exploration. Some initial observations from the first reading and engraving are outlined in the next section (please note: these observations are not identified as "mistakes", but rather as unusual features).

5.2.1. Prelude

1. In bar 16, the violin 1 is missing staccato symbols as all the other voices have these articulation markings.
2. On the first page of the score, Temmingh provides some writings on the music, but some parts are erased or lost due to paper damage.

5.2.2. Fuga

1. In bar 4, there is a liquid stain that covers one of the notes in the violin 2 part.
2. At each initial entry point of the Fuga (bars 1, 4, 7, and 11), Temmingh writes a woodwind instrument (oboe, bassoon, clarinet and flute). This could indicate a timbral consideration, or even that the composer initially intended to write the work for a woodwind ensemble. The reason for this is not yet clear. For the purpose of this study and performance, it will be left out of the part.

5.2.3. Strykkwartet no. 1

5.2.3.1. Movement I

1. Bar 24 is missing a minim rest spanning over the first two beats of the bar.
2. Temmingh scratched out a 6-bar ritardando starting in bar 53.
3. An entire *Adagio* section (bar 59-71) had been scratched out.
4. Temmingh is missing a 5/4-time signature when he rapidly changes metre in bar 82.
5. Notes present in bar 97 on the second beat, in the first violin part, are misplaced and do not fit in the notated time signature.
6. The violin 2 part, in bar 97, has two sets of notes written over each other. It is unclear which notes Temmingh meant to keep or discard.
7. In bar 138, Temmingh neglects to insert the proper time signature again.
8. Tempo indication (*Adagio*) is out of place in bar 159.

5.2.3.2. Movement II

1. No inaccuracies were found in this movement.

5.2.3.3. Movement III

1. Bar 22 has a scratched out note because of the 5/8-time signature.

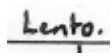

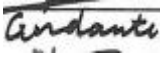

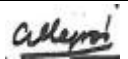

5.3. Editorial Markings

To efficiently explain my documentation, I have highlighted four categories of discussion: articulation, metronome markings, dynamic blueprint, and general areas of inspection.

Articulation acts as a parameter that determines the sound quality of each note, defining the attack and decay (Belkin, 2003:20, 27). Intrinsic to this parameter is the ability to modify the timbre of any given pitch. Temmingh uses articulation to provide contrast between legato and staccato; staccato passages are almost pointillistic in some places.

Temmingh uses slurs throughout both quartets. Their function is not always clear as to whether it is intended for slurring of notes or if it is meant as visual aid in musical phrasing. After investigation and comparison of both quartets, some slurring marks have been extended or shortened to reinforce the idea of musical contrast between legato and staccato.

The use of metronome markings is inconsistent and at some points unrealistic when technical aspects of the parts are taken into consideration. The decision to add metronome markings is two-fold; the first, is to help the individual-, and then later, the group rehearsal. The second reason for the markings is to serve as a collection point so that the players can communicate at section changes, which is prevalent in these works.

Context	Original Manuscript	Editorial Markings	Reason
Prelude, bar 1.		Lento  = 55	The slower tempo forces an eerie sound due to the slow sustained pitches
Fuga, bar 1.		Andante  = 76	This tempo allows for articulation to be clear.
Fuga, bar 58.		Allegro  = 110	Temmingh suggest that this part be faster or have more movement. This tempo is also in relation to the one stated at the beginning of the movement.

Strykkwartet (Mov I), bar 1.	<u>Adagio.</u>	Adagio ♩ = 70	This tempo marking is to help create contrast between legato and staccato articulation.
Strykkwartet (Mov I), bar 42.	<u>Vivo.</u>	Vivo ♩ = 120	This more rhythmical, section needs to be faster to enable that the proper spiccato articulation is achieved.
Strykkwartet (Mov I), bar 171.	<u>Adagio.</u>	Adagio ♩ = 70	The material presented here are similar to that of the beginning, therefore the same tempo marking is stated.
Strykkwartet (Mov II), bar 1.	<u>Lento.</u>	Lento ♩ = 52	This slow movement is characterised by legato bow strokes. The tempo marking aims to assist in achieving the sound colour.
Strykkwartet (Mov II), bar 36.	<u>Quasi Allegretto.</u>	Quasi Allegretto ♩ = 116	This section sounds military inspired and contrasts the gentle opening. The tempo in this section was correlated with the slower beginning.
Strykkwartet (Mov III), bar 1.	<u>Presto.</u>	Presto ♩ = 150 - 155	This is a fast movement and to maintain the quality in pitch and articulation, the ideal tempo would be between the suggested 150 – 155 bpm.

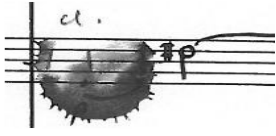
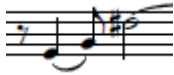




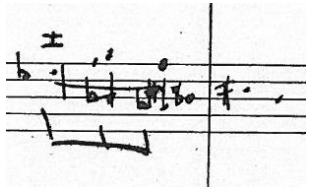

Strykkwartet (Mov III), bar 153.		Lento ♩ = 52	Adding these markings emphasise the cyclic ending in the string quartet. The material presented is a verbatim quote from the second movement.
Strykkwartet (Mov III), bar 158.		Adagio ♩ = 70	This is also a verbatim quote from the first movement.

The most of my editorial choices practiced, is in the adding of metronome markings towards the end of the final movement of *Strykkwartet no. 1*. In this Coda section, Temmingh quotes a number of primary melodic sets from the previous movements, verbatim. I have chosen to insert the tempo markings of the respective melodies, as found in the previous movements. The reason for this is to clearly state this quotation in its original form and in that way reinforce overall musical structure in performance.



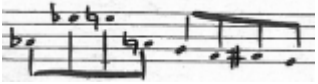





Dynamics is another element that mostly lacks in the scores. It is only in the *Prelude* that Temmingh provides sufficient dynamics to help the players collaborate and interpret the music. In the subsequent movements, dynamics are spaced so sparsely that questions about dynamic levelling arose often in rehearsal. In this instance my main guide was the movement of the individual lines that give rise to possible dynamic suggestions, as they arose in rehearsals and in analytical explorations.

Rehearsing in the ensemble also helped me to better understand phrasing and possible points of tension/relaxation in the music. According to these performative and aural interpretations, the appropriate dynamics were added to emphasise tense, dissonant, passages and create contrast with other more relaxed, consonant, passages.

The inspection of general areas will be discussed to show uncertainties that emerged due to unclear writings in the score.

Context	Original Manuscript	Editorial Markings	Reason
Prelude, bar 4.			Following the interval class from the other voices, integer [5,8,4] fits this structure.
Strykkwartet no. 1 (Mov I), bars 60-71.			Temmingh scratched out this entire section. The jump between the leftover sections felt abrupt and didn't flow too well. Thus, keeping it helped the transition
Strykkwartet no 1 (Mov I), bar 82.			The time signature was added to clarify the bar.
Strykkwartet no. 1 (Mov I), bar 97			The intervallic classes were followed after considering the other voices. The [4,11,9] set occurs throughout all the other voices.

The diagram below will show the articulation editing, and the reasoning

Context	Original Manuscript	Editorial Markings	Reason
Prelude, bar 20			To create a unified sound. All the voices are playing legato at this point.
Strykkwartet (Mov I), bar 8			This figure is repeated throughout the voices. To add phrasing and dynamic shape, slurs were added
Strykkwartet (Mov I), bars 61 -62			Adding the slurs helped to give direction towards the fermata.
Strykkwartet (Mov I), bars 63 -64			These slurs help to reduce bowing movement and give a legato articulation to the section.

These edits are interpretive interventions and can be viewed in addenda C and F at the end of this thesis.

5.4. Personal reflections and Conclusion

In this study, I have provided updated biographical information, historical background, and musical analytical explorations of Temmingh's string quartets, *Prelude en Fuga* and *Strykkwartet no. 1*. I furthermore contextualised these findings from a performance and editorial perspective to show how these processes informed my engraving and editing of their scores.

One of the aims of this thesis was to determine a suitable manner to analyse these string quartets. Using Pitch class set theory, it was easy to explore Temmingh's compositional methodology for construction of the works while simultaneously linking it to the main elements of music: melody, rhythm, harmony and formal structure.

In each case Temmingh is able to generate ingenious ways that highlight his compositional savvy practiced while writing these string quartets. Melodies are constructed carefully and with strategic building blocks of intervallic structure. Each voice fills a unique role that he cleverly uses to create harmonic ambiguity, shifting focusing between horizontal- and vertical harmony. Diverse rhythmic layering is explored so that there is space to manipulate texture. Harmonic structure shows Bartok's and Shostakovich's influence on the impressionable Temmingh.

Another goal was to create a starting point, i.e. a legible score, for other chamber musicians interested in learning Temmingh's string quartet music. In creating these resources, I have attempted to combine, discuss, and provide analyses of *Prelude en Fuga & Strykkwartet no. 1*, all in preparation so that there may be scholarly validity in these works. The concluding discussions in this thesis also serves as a comparison for future performances.

The process of adding this creating output started with the engraving process of the original manuscript. All original markings were left as presented in the score to minimize bias influence. The practice session of the works provided practical insight and this is documented in the form of edits in the score. This translation of knowledge is what will be presented in the edited score and performance of this work.

The comparative review provides comparison between the two string quartets so that the similarities and differences can be highlighted. The difference is what gives each string quartet a unique character. Most noteworthy is Temmingh's treatment in structure and how it reflects in transitional and developmental sections.

While it would be best to reserve a definite answer on Temmingh's stylistic quality of these works, a clear sound world is created. This sound world consists of various influences, making these works unique to that of his other string music - i.e. his *violsone* or *Drie sonette*. This poly-stylistic approach is a mixture of various composition practices. In *Prelude en Fuga* we see a strong pull towards the historical configuration. In *Strykkwartet*, structure is not as rigid.

The scope of this study was limited to the analysis of Temmingh's string quartets, looking at style, technique and performance of the music; further research could be expanded to look at the oeuvre of chamber music written around the same time as these two. Applying action

research to generate a pedagogical guideline to learn these string quartets works is another topic that can lead to greater insight when performing the works. Investing in these research opportunities may lead to the increased accessibility of a foremost South African composer.

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APPENDIX A PRELUDE EN FUGA

Roelf Temmingh.

1973.

Prelude. Lento.

* Hierdie... saet verspette inhoud. Dis opp...
 wat gif g... avant-garde - om... as h... kor... endige...
 aanval van hoop op my redding uit nederige vrugte... in. Hierdie gifgooie... valsstarrige
 wsikaal-hardlywiges) sal my '... akkige uitwerpsel... stak... w... Ek dista... my van
 'e noot - geskryf uit minnyring (en meesgevoel) vir die siekes v... kaprole...
 nog sluk. 1973

2.

The image displays a handwritten musical score on a five-staff system. The notation is in a single melodic line, likely for a voice or a single melodic instrument. The score is divided into three systems, each containing five staves. The first system begins with a treble clef and a key signature of one flat (B-flat). The music features a variety of note values, including eighth, quarter, and half notes, as well as rests. Dynamics such as *p* (piano) and *pp* (pianissimo) are indicated throughout. The second system continues the melodic line, with some notes marked with accents. The third system concludes the piece with a final cadence. The handwriting is clear and legible, with some corrections visible in the first system.

Fuga.
Andante.

The musical score is written in 4/4 time and marked 'Andante'. It consists of four systems of three staves each. The first system includes a treble, alto, and bass staff. The second system includes a treble, alto, and bass staff. The third system includes a treble, alto, and bass staff. The fourth system includes a treble, alto, and bass staff. The score features various musical notations including notes, rests, accidentals, and dynamic markings such as 'p' (piano) and 'ff' (fortissimo). There are also some handwritten annotations like 'cl.' and 'pff'.

Handwritten musical score for a multi-staff piece, likely for piano and strings. The score is divided into systems of three staves each. The first system (measures 1-3) shows a piano introduction with a treble and bass staff. The second system (measures 4-6) continues the piano part. The third system (measures 7-9) introduces a string section with a treble and bass staff. The fourth system (measures 10-12) continues the string part. The fifth system (measures 13-15) shows the piano and string parts. The sixth system (measures 16-18) continues the piano and string parts. The seventh system (measures 19-21) shows the piano and string parts. The eighth system (measures 22-24) continues the piano and string parts. The ninth system (measures 25-27) shows the piano and string parts. The tenth system (measures 28-30) continues the piano and string parts. The eleventh system (measures 31-33) shows the piano and string parts. The twelfth system (measures 34-36) continues the piano and string parts. The score includes various musical notations such as notes, rests, and dynamic markings like "p. cresc...".

This image shows a handwritten musical score for a piano piece, consisting of four systems of staves. The notation is in a single system, with multiple staves per system. The score includes various musical notations such as notes, rests, and dynamic markings like 'ff'.

The first system (measures 32-34) features a complex melodic line in the upper staves and a more rhythmic accompaniment in the lower staves. The second system (measures 35-37) is marked with 'ff' (fortissimo) and shows a more intense and technically demanding passage. The third system (measures 38-40) continues the melodic development. The fourth system (measures 41-44) concludes the piece with a final melodic flourish.

Measure numbers are indicated on the left margin (32, 35, 38, 41) and the right margin (34, 37, 40, 44).

6.

The image displays a handwritten musical score on 12 staves, arranged in four systems of three staves each. The notation is complex, featuring a variety of musical symbols including notes, rests, accidentals (sharps, flats, naturals), and dynamic markings such as 'p' (piano) and 'f' (forte). The score is divided into measures by vertical bar lines. The handwriting is in ink on aged paper. The first system (staves 1-3) begins with a treble clef and a key signature of one flat. The second system (staves 4-6) continues the composition with similar notation. The third system (staves 7-9) includes a 'gliss' marking, suggesting a glissando. The fourth system (staves 10-12) concludes the piece with a final cadence. The overall style is that of a personal manuscript or a composer's sketch.

Handwritten musical score for a string quartet, page 7. The score is written on four staves (5/4, 5/4, 5/4, 5/4) and includes various musical notations such as notes, rests, and dynamic markings. The score is divided into three systems, each starting with a double bar line. The first system (measures 51-54) includes the marking "adagio" and "mp cresc.". The second system (measures 55-58) includes the marking "f cresc.". The third system (measures 59-62) includes the markings "Rit...", "adagio", and "ff". The score concludes with a double bar line and the marking "ff".

The image shows a handwritten musical score on page 8. The score is organized into three systems, each consisting of three staves. The notation includes various musical symbols such as notes, rests, and dynamic markings.

- System 1 (Measures 68-70):** The first staff has a treble clef and a key signature of one flat. It contains a series of eighth and sixteenth notes. The second staff has a bass clef and contains a series of eighth notes. The third staff has a bass clef and contains a series of eighth notes. Dynamic markings include *p* and *pp*.
- System 2 (Measures 71-72):** The first staff continues the melodic line. The second staff has a bass clef and contains a series of eighth notes. The third staff has a bass clef and contains a series of eighth notes. Dynamic markings include *p* and *pp*. The word *andante* is written above the first staff.
- System 3 (Measures 73-74):** The first staff has a treble clef and contains a series of eighth notes. The second staff has a bass clef and contains a series of eighth notes. The third staff has a bass clef and contains a series of eighth notes. Dynamic markings include *ppp*.

Handwritten page numbers 70, 72, and 74 are visible on the right margin of the first, second, and third systems respectively.

2

23

3

p

3

p

3

p

3

p

28

34

ppp

3

ppp

ppp

ppp

ppp

40 3

The image shows a musical score for measures 40, 41, and 42. The score is written on five staves. The first staff is a treble clef, and the other four are bass clefs. The key signature has one sharp (F#). The time signature is 4/4. The score is marked with *ppp* (pianissimo) in measures 40, 41, and 42. The notation includes various note values, rests, and slurs. The first staff has a whole rest in measure 40, a half note in measure 41, and a whole note in measure 42. The second staff has a half note in measure 40, a half note in measure 41, and a whole note in measure 42. The third staff has a half note in measure 40, a half note in measure 41, and a whole note in measure 42. The fourth staff has a half note in measure 40, a half note in measure 41, and a whole note in measure 42. The fifth staff has a half note in measure 40, a half note in measure 41, and a whole note in measure 42.

Prelude en Fuga

"Fuga"

Andante $\text{♩} = 91$

Violin I *p*

Violin II *p*

Viola

Violoncello

5

p

9

p

2
12

15

18

22

System 22: This system contains measures 22, 23, and 24. It features a complex melodic line in the upper right voice with many accidentals (sharps, flats, naturals) and slurs. The lower voices provide harmonic support with various note values and rests.

25

System 25: This system contains measures 25, 26, 27, and 28. The upper right voice continues with a melodic line, while the other voices have more sustained notes and some rhythmic patterns.

29

System 29: This system contains measures 29, 30, and 31. Measures 29 and 30 show a melodic line in the upper right voice. Measure 31 features a triplet of eighth notes in the upper right voice, marked with *p cresc.* (piano, crescendo). The lower voices also have melodic lines, with the bass line marked with *p cresc.* in measure 31.

4
32

34

ff

36

3

5

38

42

45

6
47

tr

3

49

51

3

55

3

58 Allegro $\text{♩} = 144$

mp cresc.

mf cresc.

61

f cresc.

f cresc.

8
63

Rit.....
fff
Rit.....
fff
Rit.....
fff
Rit.....
fff

67 Allegro ♩ = 144
ff
ff
ff

69

71

73

Andante $\text{♩} = 91$

79

APPENDIX C

Prelude en Fuga

"Fuga"

Andante $\text{♩} = 91$

Violin I

Violin II

Viola

Violoncello

6

10

2

14

System 14: A four-staff musical score. The top staff (treble clef) contains a melodic line with various accidentals and ties. The second staff (treble clef) contains a rhythmic accompaniment. The third staff (bass clef) is empty. The fourth staff (bass clef) contains a bass line. The system is divided into four measures.

18

System 18: A four-staff musical score. The top staff (treble clef) contains a melodic line. The second staff (treble clef) contains a rhythmic accompaniment. The third staff (bass clef) is empty. The fourth staff (bass clef) contains a bass line. The system is divided into four measures. Dynamic markings *mp* (mezzo-piano) are present in the second and third measures of the top staff, and *p* (piano) and *f* (forte) are present in the fourth measure of the bottom staff.

22

System 22: A four-staff musical score. The top staff (treble clef) contains a melodic line. The second staff (treble clef) contains a rhythmic accompaniment. The third staff (bass clef) contains a bass line. The fourth staff (bass clef) contains a bass line. The system is divided into four measures.

26

System 26: Four staves of music. The first staff (treble clef) has a red underline under the first two measures. The second staff (treble clef) has a red underline under the last two measures. The third staff (bass clef) has a red underline under the first two measures. The fourth staff (bass clef) has a red underline under the first two measures.

30

System 30: Four staves of music. The first staff (treble clef) has a red underline under the last two measures. The second staff (treble clef) has a red underline under the last two measures. The third staff (bass clef) has a red underline under the last two measures. The fourth staff (bass clef) has a red underline under the last two measures. Dynamics: *p cresc.* (piano crescendo) is marked above the first staff and below the third and fourth staves.

33

System 33: Four staves of music. The first staff (treble clef) has a red *mp* (mezzo-piano) marking. The second staff (treble clef) has a red *mp* marking. The third staff (bass clef) has a red *f* (forte) marking. The fourth staff (bass clef) has a red *f* marking.

4

35

ff

ff

ff

ff

3

37

fff

fff

fff

fff

f

f

f

f

ff

41

mf

mf

f

mf

mf

f

f

mf

45 5

45 46

47

47 48 49

50

50 51 52 53

6 54

mf

f

f

3 3

58 Allegro ♩ = 110

mp cresc.

mf cresc.

61

f cresc.

mf

f cresc.

64

Rit.....

Rit.....

Rit.....

Rit.....

fff

fff

fff

fff

67 Allegro $\text{♩} = 144$

ff

ff

ff

f

f

70

ff

f

f

8 72

subito *p*

subito *p*

subito *p*

subito *p*

74 Andante ♩ = 91

p

pp

p

78

ppp

PPP

ppp

ppp

ppp

PPP

ppp

PPP

APPENDIX D

STRING QUARTET NO. I

Adagio. *Revised Summary is*
1968 a

The image shows a handwritten musical score for a String Quartet No. I, marked 'Adagio'. The score is written on four staves: Violin I, Violin II, Viola, and Cello. The notation is in a handwritten style, featuring various musical symbols such as clefs, key signatures, time signatures, and note values. The score is organized into three systems of music. The first system has four measures. The second system has four measures. The third system has four measures. The notation includes various musical symbols such as clefs, key signatures, time signatures, and note values.

The image displays a handwritten musical score on a single page, organized into three systems of four staves each. The notation is in ink and appears to be a draft or a working manuscript. The first system (top) begins with a treble clef on the first staff, followed by a bass clef on the second, a treble clef on the third, and a bass clef on the fourth. The second system (middle) continues the composition with similar clef arrangements. The third system (bottom) also follows the same pattern. The music includes various note values, rests, and accidentals (sharps, flats, and naturals). Dynamic markings, such as 'p' (piano), are visible. The handwriting is somewhat fluid, with some corrections and erasures visible, particularly in the middle system. The overall structure suggests a multi-measure rest followed by a melodic entry in the first system, and more complex rhythmic patterns in the subsequent systems.

Handwritten musical score for a four-part setting, featuring staves for Soprano, Alto, Tenor, and Bass. The score is divided into three systems, each marked with a double bar line and a repeat sign (==).

System 1:

- Soprano:** Starts with a treble clef and a key signature of one sharp (F#). The melody begins with a half note G4, followed by quarter notes A4, B4, and C5. Dynamics include *pp* and *p*.
- Alto:** Starts with a treble clef and a key signature of one sharp. The melody begins with a half note G4, followed by quarter notes A4, B4, and C5. Dynamics include *pp* and *p*.
- Tenor:** Starts with a treble clef and a key signature of one sharp. The melody begins with a half note G4, followed by quarter notes A4, B4, and C5. Dynamics include *pp* and *p*.
- Bass:** Starts with a bass clef and a key signature of one sharp. The melody begins with a half note G3, followed by quarter notes A3, B3, and C4. Dynamics include *p* and *pp*.

System 2:

- Soprano:** Continues the melody with a half note D5, followed by quarter notes E5, F#5, and G5. Dynamics include *p* and *pp*.
- Alto:** Continues the melody with a half note D5, followed by quarter notes E5, F#5, and G5. Dynamics include *pp* and *p*.
- Tenor:** Continues the melody with a half note D5, followed by quarter notes E5, F#5, and G5. Dynamics include *pp* and *p*.
- Bass:** Continues the melody with a half note D4, followed by quarter notes E4, F#4, and G4. Dynamics include *pp* and *p*.

System 3:

- Soprano:** Continues the melody with a half note A5, followed by quarter notes B5, C6, and D6. Dynamics include *p* and *pp*.
- Alto:** Continues the melody with a half note A5, followed by quarter notes B5, C6, and D6. Dynamics include *pp* and *p*.
- Tenor:** Continues the melody with a half note A5, followed by quarter notes B5, C6, and D6. Dynamics include *pp* and *p*.
- Bass:** Continues the melody with a half note A4, followed by quarter notes B4, C5, and D5. Dynamics include *pp* and *p*.

The score includes various musical notations such as clefs, key signatures, notes, rests, and dynamics. The handwriting is clear and legible.

Vivo.

The musical score is handwritten and consists of four systems of staves. The first system is marked Vivo. and features a treble clef, a 6/8 time signature, and a key signature of one flat. The music is written for four staves. The second system continues the piece with similar notation. The third system includes dynamics such as *ff* and *mf*. The fourth system features a *decresc.* marking and a *Pizz.* (pizzicato) instruction. The score is written in a clear, legible hand.

Adagio

The musical score is handwritten and consists of three systems, each with four staves. The first system is marked with a wavy line above it and the tempo *Adagio*. The notation includes various musical symbols such as notes, rests, and dynamic markings like *pp* and *arco*. The second and third systems are marked with double bar lines and repeat signs. The score is written in a cursive, handwritten style.

Handwritten musical score for a piece titled "Poco a poco accel. w. cresc.". The score is written on four staves, likely representing different instruments or voices. The notation includes various musical symbols such as notes, rests, and dynamic markings like "p" (piano) and "f" (forte). The tempo and dynamics are indicated by the title and the markings. The score is divided into measures by vertical bar lines. The handwriting is in ink on aged paper.

The image displays a handwritten musical score for a four-part setting, likely a Mass. The score is written on four staves, each representing a different vocal part: Soprano (top), Alto (second), Tenor (third), and Bass (bottom). The notation is in a traditional style, featuring various musical symbols such as notes, rests, accidentals (sharps, flats, naturals), and dynamic markings (e.g., *p*, *f*). The score is divided into three systems, each separated by a double bar line. The first system consists of four measures, the second system consists of four measures, and the third system consists of four measures. The notation is dense and includes many accidentals, suggesting a complex harmonic structure. The overall style is that of a handwritten manuscript, with some ink bleed-through visible from the reverse side of the paper.

Marcato.

The image shows a handwritten musical score for a four-staff instrument, likely a piano, in 2/4 time. The tempo is marked "Marcato." The score is divided into three systems by double bar lines. The notation includes various rhythmic values (quarter, eighth, sixteenth notes), rests, and accidentals (sharps, flats, naturals). The first system has four staves. The second system has four staves. The third system has four staves. The notation is dense and appears to be a student or working draft manuscript.

The image displays a handwritten musical score, likely for a four-part vocal or instrumental setting. It is organized into three systems, each containing four staves. The notation is handwritten and includes various musical symbols:

- System 1:** The first staff begins with a treble clef and a common time signature. It features a series of notes with accidentals (flats and naturals) and rests. The second staff starts with a bass clef and a common time signature, followed by notes and rests. The third staff uses a soprano clef and a common time signature, with notes and rests. The fourth staff uses an alto clef and a common time signature, with notes and rests.
- System 2:** The first staff begins with a treble clef and a common time signature. It features a series of notes with accidentals (flats and naturals) and rests. The second staff starts with a bass clef and a common time signature, followed by notes and rests. The third staff uses a soprano clef and a common time signature, with notes and rests. The fourth staff uses an alto clef and a common time signature, with notes and rests.
- System 3:** The first staff begins with a treble clef and a common time signature. It features a series of notes with accidentals (flats and naturals) and rests. The second staff starts with a bass clef and a common time signature, followed by notes and rests. The third staff uses a soprano clef and a common time signature, with notes and rests. The fourth staff uses an alto clef and a common time signature, with notes and rests.

The notation includes various musical symbols such as clefs, time signatures, notes, rests, and accidentals. The handwriting is clear and legible, and the score is well-organized.

Adagio.

The image shows a handwritten musical score for a piece in 3/4 time, marked "Adagio." The score is written on four staves per system, with a total of three systems. The notation is in treble and bass clefs, featuring various notes, rests, and accidentals. The first system has a key signature of one sharp (F#). The second system has a key signature of one flat (Bb). The third system has a key signature of two sharps (F# and C#). The tempo is marked "Adagio." at the beginning.

The image displays a handwritten musical score for a four-part setting, likely a Mass, featuring Soprano, Alto, Tenor, and Bass staves. The score is divided into three systems. The first system has a 6/8 time signature. The second system is marked 'Vivo' and has a 4/8 time signature. The third system continues the 4/8 time signature. The notation includes various musical symbols such as notes, rests, accidentals, and dynamic markings like 'p' and 'f'.

System 1 (6/8 time):

- Soprano:** Starts with a treble clef and a key signature of one sharp (F#). The melody begins with a quarter note G4, followed by a half note A4, and continues with a series of eighth and quarter notes, ending with a half note G4.
- Alto:** Starts with a treble clef and a key signature of one sharp. The melody begins with a quarter note G4, followed by a half note A4, and continues with a series of eighth and quarter notes, ending with a half note G4.
- Tenor:** Starts with a bass clef and a key signature of one sharp. The melody begins with a quarter note G3, followed by a half note A3, and continues with a series of eighth and quarter notes, ending with a half note G3.
- Bass:** Starts with a bass clef and a key signature of one sharp. The melody begins with a quarter note G2, followed by a half note A2, and continues with a series of eighth and quarter notes, ending with a half note G2.

System 2 (Vivo, 4/8 time):

- Soprano:** Starts with a treble clef and a key signature of one sharp. The melody begins with a quarter note G4, followed by a half note A4, and continues with a series of eighth and quarter notes, ending with a half note G4.
- Alto:** Starts with a treble clef and a key signature of one sharp. The melody begins with a quarter note G4, followed by a half note A4, and continues with a series of eighth and quarter notes, ending with a half note G4.
- Tenor:** Starts with a bass clef and a key signature of one sharp. The melody begins with a quarter note G3, followed by a half note A3, and continues with a series of eighth and quarter notes, ending with a half note G3.
- Bass:** Starts with a bass clef and a key signature of one sharp. The melody begins with a quarter note G2, followed by a half note A2, and continues with a series of eighth and quarter notes, ending with a half note G2.

System 3 (4/8 time):

- Soprano:** Starts with a treble clef and a key signature of one sharp. The melody begins with a quarter note G4, followed by a half note A4, and continues with a series of eighth and quarter notes, ending with a half note G4.
- Alto:** Starts with a treble clef and a key signature of one sharp. The melody begins with a quarter note G4, followed by a half note A4, and continues with a series of eighth and quarter notes, ending with a half note G4.
- Tenor:** Starts with a bass clef and a key signature of one sharp. The melody begins with a quarter note G3, followed by a half note A3, and continues with a series of eighth and quarter notes, ending with a half note G3.
- Bass:** Starts with a bass clef and a key signature of one sharp. The melody begins with a quarter note G2, followed by a half note A2, and continues with a series of eighth and quarter notes, ending with a half note G2.

The image displays a handwritten musical score, likely a four-part setting of a Mass (Kyrie, Gloria, Credo, Sanctus, Agnus Dei). The score is written on four staves, with the top three staves representing vocal parts (Soprano, Alto, Tenor) and the bottom staff representing the basso continuo. The notation is a mix of standard musical notation and shorthand, including notes, rests, and accidentals. The score is divided into three systems, each containing four measures. The first system shows the beginning of the piece, with the vocal parts entering in the first measure. The second system shows the continuation of the piece, with the vocal parts and basso continuo line. The third system shows the end of the piece, with the vocal parts and basso continuo line. The notation is written in a clear, legible hand, and the score is well-organized.

The image displays a handwritten musical score, likely a four-part setting of a Mass (Kyrie, Gloria, Credo, Sanctus, Agnus Dei). The score is organized into three systems, each consisting of four staves. The top three staves in each system are for vocal parts (Soprano, Alto, Tenor), and the bottom staff is for the basso continuo. The notation is handwritten and includes various musical symbols such as clefs, key signatures, time signatures, and note values. The first system shows a key signature of one sharp (F#) and a time signature of 4/4. The second system shows a key signature of one flat (Bb) and a time signature of 4/4. The third system shows a key signature of one sharp (F#) and a time signature of 4/4. The score is written on a single page, with the page number 117 at the bottom.

The image displays a handwritten musical score for a four-part setting, likely a Mass. The score is organized into three systems, each consisting of four staves (Soprano, Alto, Tenor, and Bass). The notation is handwritten and includes various musical symbols such as clefs, key signatures, time signatures, and note values. The first system begins with a treble clef and a key signature of one sharp (F#). The second system begins with a treble clef and a key signature of one flat (Bb). The third system begins with a treble clef and a key signature of one sharp (F#). The score is divided into three systems, each with a double bar line and repeat signs. The notation includes various musical symbols such as clefs, key signatures, time signatures, and note values.

Vivo.

The musical score is handwritten and consists of three systems of four staves each. The first system begins with the tempo marking *Vivo.* and contains three measures. A double bar line separates it from the second system, which contains four measures. Each measure in the second system is numbered in parentheses at the end: (5), (6), (5), and (3). The third system contains three measures. The notation includes various musical symbols such as notes, rests, accidentals (sharps, flats, naturals), and dynamic markings (f, p). The key signature is one flat (B-flat).

The image displays a handwritten musical score, likely a four-part setting of a Mass (Kyrie, Gloria, Credo, Sanctus, Agnus Dei). The score is written on four staves per system, with the bottom staff serving as a basso continuo line. The notation is in a historical style, featuring various musical symbols, accidentals, and figured bass notation.

The score is divided into three systems, each containing four staves. The first system shows a complex melodic line in the top staff, with the other staves providing harmonic support. The second system continues the melodic development, with the bottom staff featuring a series of figured bass notes. The third system concludes the piece with a final cadence, marked by a double bar line and a fermata.

The notation includes various musical symbols such as notes, rests, accidentals, and figured bass notation. The score is written in a clear, legible hand, with some corrections and erasures visible. The overall structure of the piece suggests a formal, liturgical setting.

(12)

II

Lento.

The musical score is written for four staves. The first system consists of three measures. The top three staves (treble, alto, and tenor) contain whole rests. The bottom staff (bass) contains a melodic line starting with a half note, followed by a quarter note, and then a half note. The second system also consists of three measures. The top staff has a half note, a quarter note, and a half note. The second staff has a half note, a quarter note, and a half note. The third staff has a half note, a quarter note, and a half note. The bottom staff has a half note, a quarter note, and a half note. The third system consists of three measures. The top staff has a half note, a quarter note, and a half note. The second staff has a half note, a quarter note, and a half note. The third staff has a half note, a quarter note, and a half note. The bottom staff has a half note, a quarter note, and a half note.

The image displays a handwritten musical score for a four-part setting, likely a Mass, in G major and 4/4 time. The score is divided into three systems, each with four staves (Soprano, Alto, Tenor, Bass). The first system contains the beginning of the piece, the second system continues the melody and accompaniment, and the third system concludes with a final cadence. The notation includes various musical symbols such as clefs, key signatures, time signatures, notes, rests, and bar lines.

The image displays a handwritten musical score for a four-part setting, possibly a Mass. The score is organized into three systems, each containing four staves. The notation is handwritten and includes various musical symbols such as notes, rests, accidentals, and dynamic markings. The first system begins with a double bar line and a repeat sign. The second system also begins with a double bar line and a repeat sign. The third system begins with a double bar line and a repeat sign. The notation is written in a style that suggests it is a working draft or a student's composition. The staves are numbered 1 through 4, and the measures are numbered 1 through 3. The score is written in a key signature of one flat (B-flat) and a time signature of 4/4. The notation includes various musical symbols such as notes, rests, accidentals, and dynamic markings. The first system begins with a double bar line and a repeat sign. The second system also begins with a double bar line and a repeat sign. The third system begins with a double bar line and a repeat sign. The notation is written in a style that suggests it is a working draft or a student's composition. The staves are numbered 1 through 4, and the measures are numbered 1 through 3. The score is written in a key signature of one flat (B-flat) and a time signature of 4/4. The notation includes various musical symbols such as notes, rests, accidentals, and dynamic markings.

The image displays a handwritten musical score, likely a four-part setting, consisting of three systems of staves. Each system includes a treble staff and a bass staff, with a grand staff (treble and bass) also present in each system. The notation is handwritten and includes various musical symbols such as notes, rests, accidentals (sharps, flats, naturals), and dynamic markings (e.g., *mp*, *f*). The first system begins with a key signature of one sharp (F#) and a time signature of 4/4. The second system features a key signature change to one flat (Bb) and a time signature of 3/4. The third system continues in the same key and time signature. The score is marked with double bar lines and repeat signs, indicating different sections or measures. The handwriting is clear and legible, with some annotations in the margins.

Quasi Allegretto

The image displays a handwritten musical score for a piece titled "Quasi Allegretto". The score is organized into four systems, each consisting of four staves. The first system begins with a treble clef and a 4/8 time signature. The notation includes various musical symbols such as notes, rests, and dynamic markings. The second system continues the piece with similar notation. The third system also follows the same pattern. The fourth system concludes the piece with a final cadence. The handwriting is clear and legible, and the score is well-organized.

The image displays a handwritten musical score, likely a Mass setting, written on four staves. The notation is in a historical or academic style, featuring various musical symbols and clefs. The score is organized into three systems, each containing four staves. The first system includes a Soprano staff (treble clef), an Alto staff (treble clef), a Tenor staff (alto clef), and a Bass staff (bass clef). The second system continues the composition, and the third system concludes with a double bar line. The notation includes various musical symbols such as clefs, time signatures, notes, rests, and dynamic markings. The handwriting is clear and legible, suggesting a professional or academic context.

The image displays a handwritten musical score for a four-part setting, likely a vocal or instrumental ensemble. The score is divided into three systems, each with four staves (Soprano, Alto, Tenor, and Bass). The notation is highly detailed, featuring various rhythmic values, accidentals, and dynamic markings.

System 1: The first system contains four staves of music. Above the staves, there are numerous rhythmic markings and accidentals, including notes with stems, beams, and various accidentals (sharps, flats, naturals). The staves themselves contain complex rhythmic patterns with many beamed notes and rests.

System 2: The second system begins with a double bar line and the tempo marking "Rit." (Ritardando) followed by a dashed line and "Lento." (Lento). The staves contain music with a slower tempo, indicated by longer note values and rests. The notation includes various rhythmic values and accidentals.

System 3: The third system continues the musical setting with four staves. It features complex rhythmic patterns and accidentals, similar to the first system. The notation is dense and detailed, with many beamed notes and rests.

The image displays a handwritten musical score for a four-part setting, likely a Mass. The score is organized into three systems, each beginning with a double bar line and a repeat sign. The staves are arranged in four parts: Soprano (top), Alto, Tenor, and Bass (bottom). The notation includes various musical symbols such as clefs, key signatures, time signatures, and note values. The first system consists of four measures. The second system also consists of four measures. The third system consists of four measures, with the final measure ending in a double bar line. The handwriting is in ink on a light-colored background.

III

Presto

The musical score is handwritten and consists of three systems, each with four staves. The first system is marked 'Presto' and has a 6/8 time signature. The second system has a 4/8 time signature. The third system has a 6/8 time signature. The notation includes various musical symbols such as notes, rests, and accidentals.

The image displays a handwritten musical score, likely a Mass setting, consisting of three systems of four staves each. The notation is in a historical style, possibly 18th or 19th century.

- System 1:** The first two staves (treble clef) contain vocal or instrumental parts with various note values and rests. The third and fourth staves (bass clef) appear to be figured bass parts, with notes and rests indicating the harmonic structure.
- System 2:** Similar to the first system, it features four staves. The first two staves have more complex rhythmic patterns, while the last two staves continue the figured bass. There are some markings like '5' and '6' above the bass staves, possibly indicating fingerings or specific notes.
- System 3:** This system also consists of four staves. The first two staves have more complex rhythmic patterns, while the last two staves continue the figured bass. There are some markings like '5' and '6' above the bass staves, possibly indicating fingerings or specific notes.

The notation includes various note values (quarter, eighth, sixteenth notes), rests, and clefs (treble and bass). The overall structure suggests a multi-measure rest or a complex rhythmic pattern in the vocal parts, with the figured bass providing the harmonic support.

The image displays a handwritten musical score for a four-part setting, organized into three systems. Each system consists of four staves, likely representing voices (Soprano, Alto, Tenor, Bass) or instruments. The notation is in a historical style, featuring various note values, rests, and bar lines. The first system shows a complex melodic line in the top staff, with the other three staves providing harmonic support. The second system continues the composition, with the top staff featuring a more active melody. The third system concludes the piece, with the top staff ending on a final cadence. The handwriting is clear and legible, typical of 18th or 19th-century musical manuscripts.

The image displays a handwritten musical score for a four-part setting, likely a Mass, in G major. The score is organized into three systems, each consisting of four staves (Soprano, Alto, Tenor, and Bass). The notation is written in a clear, legible hand, typical of a composer's manuscript. The first system contains 8 measures, the second system contains 8 measures, and the third system contains 8 measures. The music features various musical symbols, including clefs, key signatures, notes, rests, and bar lines. The overall structure suggests a complete musical setting, possibly for a specific liturgical occasion.



The image displays a handwritten musical score on three systems of four staves each. The staves are labeled with clefs: Soprano (C1), Alto (C2), Tenor (C3), and Bass (F1). The notation is in a historical style, featuring various note values, rests, and accidentals. The first system contains six measures of music. The second system contains five measures, with the final measure being a whole rest. The third system contains two measures, with the first measure being a whole rest and the second measure containing a complex rhythmic figure. The notation includes various musical symbols such as notes, rests, accidentals, and dynamic markings.

The image displays a handwritten musical score, likely a four-part setting of a Mass (Kyrie, Gloria, Credo, Sanctus, Agnus Dei). The score is written on four staves, each with a different clef: Soprano (C-clef), Alto (C-clef), Tenor (C-clef), and Bass (F-clef). The notation is in a historical style, featuring various clefs, accidentals (sharps, flats, naturals), and bar lines. The music is organized into measures, with some measures containing multiple notes and others containing rests. The handwriting is clear and legible, typical of 18th or 19th-century musical notation.

This image shows a handwritten musical score for a four-part setting, likely a Mass. The score is written on ten staves, organized into three systems of four staves each. The first system (staves 1-4) and the second system (staves 5-8) each contain four vocal parts: Soprano (S), Alto (A), Tenor (T), and Bass (B). The third system (staves 9-12) contains the same four vocal parts, but the Bass part is replaced by a piano accompaniment (pian.) in the final measure. The notation is in a historical style, with many accidentals (sharps, flats, naturals) and a complex rhythmic structure. The key signature is G major (one sharp). The time signature is 4/4. The score is written in a clear, legible hand, with some corrections and markings visible.

The image displays a handwritten musical score, likely a Mass setting, written on four staves per system. The notation is in a historical or early modern style, featuring various clefs, time signatures, and musical symbols.

System 1: The first system consists of four staves. The top staff (Soprano) begins with a treble clef and a 5/4 time signature. The second staff (Alto) also starts with a treble clef and a 5/4 time signature. The third staff (Tenor) uses a C-clef (bass clef) and a 5/4 time signature. The bottom staff (Bass) uses a C-clef (bass clef) and a 5/4 time signature. The notation includes various notes, rests, and accidentals, with some notes marked with a 'p' (piano).

System 2: The second system also consists of four staves. The top staff (Soprano) begins with a treble clef and a 4/4 time signature. The second staff (Alto) also starts with a treble clef and a 4/4 time signature. The third staff (Tenor) uses a C-clef (bass clef) and a 4/4 time signature. The bottom staff (Bass) uses a C-clef (bass clef) and a 4/4 time signature. The notation includes various notes, rests, and accidentals, with some notes marked with a 'p' (piano).

System 3: The third system also consists of four staves. The top staff (Soprano) begins with a treble clef and a 4/4 time signature. The second staff (Alto) also starts with a treble clef and a 4/4 time signature. The third staff (Tenor) uses a C-clef (bass clef) and a 4/4 time signature. The bottom staff (Bass) uses a C-clef (bass clef) and a 4/4 time signature. The notation includes various notes, rests, and accidentals, with some notes marked with a 'p' (piano).

APPENDIX E

String Quartet no. 1

I

Rockel Tzamingh

Adagio

Violin I

Violin II

Viola

Violoncello

7

Violin I

Violin II

Viola

Violoncello

12

Violin I

Violin II

Viola

Violoncello

2

16

20

25

pp

pp

pp

p

30

pp p pp

35

pp ppp ppp ppp

41 Vivace

f f

47

ff *mf* *dim.*

53

p *ppp*

59 Adagio

pp *pp* *pp* *pp* *p*

64

pizz. arco

p *pp*

70

arco pizz. arco pizz. arco

76

Poco a poco accelerando e crescendo.....

arco

Poco a poco accelerando e crescendo.....

6 Poco a poco accelerando e crescendo.....

79 arco

85 Vivace

89

93

99

102

106

8

109

System 1 (Measures 109-112): This system contains four measures of music. The first two measures (109-110) feature a complex, fast-moving melody in the upper staves with many beamed sixteenth and thirty-second notes. The last two measures (111-112) show a more relaxed tempo with longer note values and rests. The key signature has one sharp (F#) and the time signature is 4/4.

113

System 2 (Measures 113-116): This system contains four measures. Measures 113-114 show a melodic line in the upper staves with some grace notes. Measures 115-116 continue the melodic development with more active eighth and sixteenth notes. The key signature remains one sharp (F#) and the time signature is 4/4.

117

System 3 (Measures 117-120): This system contains four measures. Measures 117-118 feature a steady, rhythmic pattern of eighth notes in the upper staves. Measures 119-120 show a continuation of this pattern with some melodic variation. The key signature has two flats (Bb, Eb) and the time signature is 4/4.

121 Adagio

System 4 (Measures 121-124): This system contains four measures, starting with the tempo marking 'Adagio'. The music is significantly slower than the previous systems. Measures 121-122 feature a melodic line in the upper staves with long, sustained notes. Measures 123-124 continue this slow, expressive melody. The key signature has two flats (Bb, Eb) and the time signature is 4/4.

125

129

134

10

139 *Vivo*

143

150

154

Adagio

11

157

Musical score for measures 157-163. The score is for a piano and features a complex texture with multiple staves. The key signature has two flats (B-flat and E-flat). The tempo is Adagio. The music includes various chords, arpeggios, and melodic lines. There are some red markings above the notes in measures 158, 159, and 160.

164

Musical score for measures 164-169. The score continues the complex texture from the previous system. It includes various chords, arpeggios, and melodic lines. There are some red markings above the notes in measures 165, 166, and 167.

170

Musical score for measures 170-173. The score continues the complex texture from the previous system. It includes various chords, arpeggios, and melodic lines. There are some red markings above the notes in measures 171, 172, and 173.

174

Musical score for measures 174-177. The score continues the complex texture from the previous system. It includes various chords, arpeggios, and melodic lines. There are some red markings above the notes in measures 175, 176, and 177.

12

178

System 1 (measures 178-181) features a four-staff arrangement. The top staff (treble clef) begins with a key signature change to two flats (B-flat and E-flat) and contains a melodic line with eighth and sixteenth notes. The second staff (treble clef) provides a harmonic accompaniment with eighth notes. The third staff (bass clef) continues the accompaniment with eighth notes. The bottom staff (bass clef) features a bass line with eighth notes. The system concludes with a double bar line.

182

System 2 (measures 182-185) continues the four-staff arrangement. The top staff (treble clef) shows a melodic line with a long slur over measures 182 and 183. The second staff (treble clef) and third staff (bass clef) provide harmonic support with eighth notes. The bottom staff (bass clef) features a bass line with eighth notes. The system concludes with a double bar line.

187

Vivo

System 3 (measures 187-192) is marked *Vivo* and features a four-staff arrangement. The top staff (treble clef) contains a melodic line with eighth and sixteenth notes. The second staff (treble clef) and third staff (bass clef) provide harmonic support with eighth notes. The bottom staff (bass clef) features a bass line with eighth notes. The system concludes with a double bar line.

193

System 4 (measures 193-198) continues the four-staff arrangement. The top staff (treble clef) shows a melodic line with eighth and sixteenth notes. The second staff (treble clef) and third staff (bass clef) provide harmonic support with eighth notes. The bottom staff (bass clef) features a bass line with eighth notes. The system concludes with a double bar line.

198

System 198: A four-staff musical score. The top two staves are in treble clef, and the bottom two are in bass clef. The music features a complex melodic line in the upper staves and a more rhythmic, bass-oriented line in the lower staves. The key signature has one flat (B-flat), and the time signature is 4/4. The system contains four measures of music.

202

System 202: A four-staff musical score. The top two staves are in treble clef, and the bottom two are in bass clef. The music continues from the previous system, showing a continuation of the melodic and rhythmic themes. The system contains five measures of music.

208

System 208: A four-staff musical score. The top two staves are in treble clef, and the bottom two are in bass clef. This system concludes the piece with a final cadence. The system contains six measures of music, ending with a double bar line.

String quartet no. 1

II

Lento $\text{♩} = 52$

Violin I

Violin II

Viola

Violoncello

5

8

2

12

16

19

22

System 22: Four staves (treble, alto, tenor, bass) in 3/4 time. The key signature has one flat (B-flat). The melody in the treble staff consists of eighth and quarter notes. The bass staff provides a harmonic accompaniment with eighth and quarter notes.

23

System 23: Continuation of the piece. The treble staff features a melodic line with some rests. The bass staff continues the accompaniment. The system concludes with a double bar line.

27

System 27: Continuation of the piece. The treble staff has a melodic line with some rests. The bass staff continues the accompaniment. The system concludes with a double bar line.

4

29

32

36

Quasi Allegretto $\text{♩} = 116$

41

46

51

6

56

System 56: A four-staff musical score. The top staff (treble clef) contains a melodic line with various accidentals (sharps, flats, naturals) and a final measure with a double bar line. The second staff (treble clef) features a rhythmic accompaniment with eighth and sixteenth notes, including a triplet marked '3'. The third staff (bass clef) continues the rhythmic accompaniment. The bottom staff (bass clef) provides a bass line with eighth and sixteenth notes, also including a triplet marked '3'. The system concludes with a double bar line.

57

System 57: A four-staff musical score. The top staff (treble clef) begins with a series of beamed eighth notes, followed by a measure with a double bar line. The second staff (treble clef) contains a melodic line with eighth and sixteenth notes. The third staff (bass clef) features a rhythmic accompaniment with eighth and sixteenth notes. The bottom staff (bass clef) provides a bass line with eighth and sixteenth notes. The system concludes with a double bar line.

58

System 58: A four-staff musical score. The top staff (treble clef) contains a melodic line with eighth and sixteenth notes, including a triplet marked '3'. The second staff (treble clef) features a rhythmic accompaniment with eighth and sixteenth notes. The third staff (bass clef) continues the rhythmic accompaniment. The bottom staff (bass clef) provides a bass line with eighth and sixteenth notes. The system concludes with a double bar line.

Lento $\text{♩} = 52$

72

Rit-----

76

83

8

86

90

94

String Quartet no. 1

III

Presto ♩ = 187

Violin I

Violin II

Viola

Violoncello

3

10

2

16

Musical score system 1, measures 16-21. The system consists of four staves. The top two staves are in treble clef, and the bottom two are in bass clef. The music is in 4/4 time and features a complex melodic line in the upper staves and a more rhythmic, bass-oriented line in the lower staves. The key signature has one flat.

22

Musical score system 2, measures 22-27. The system consists of four staves. The top two staves are in treble clef, and the bottom two are in bass clef. The music continues the melodic and rhythmic themes from the previous system, with some changes in the bass line. The key signature remains one flat.

28

Musical score system 3, measures 28-33. The system consists of four staves. The top two staves are in treble clef, and the bottom two are in bass clef. The music continues the melodic and rhythmic themes from the previous system, with some changes in the bass line. The key signature remains one flat.

34

System 34: A four-staff musical score. The top staff (treble clef) features a melodic line with eighth and sixteenth notes, including some accidentals. The second staff (treble clef) contains a harmonic accompaniment with chords and single notes. The third staff (alto clef) continues the harmonic accompaniment. The bottom staff (bass clef) provides a bass line with eighth and sixteenth notes. The system consists of eight measures.

43

System 43: A four-staff musical score. The top staff (treble clef) has a melodic line with various note values and accidentals. The second staff (treble clef) shows a harmonic accompaniment. The third staff (alto clef) continues the accompaniment. The bottom staff (bass clef) has a bass line. The system consists of eight measures.

53

System 53: A four-staff musical score. The top staff (treble clef) features a melodic line with eighth and sixteenth notes. The second staff (treble clef) contains a harmonic accompaniment. The third staff (alto clef) continues the accompaniment. The bottom staff (bass clef) provides a bass line. The system consists of eight measures.

4

61

Musical score system 1, measures 61-68. The system consists of four staves: Treble 1, Treble 2, Bass 1, and Bass 2. The music is in 4/4 time and features a complex melodic line in the upper staves and a more rhythmic, chordal accompaniment in the lower staves.

69

Musical score system 2, measures 69-76. The system consists of four staves: Treble 1, Treble 2, Bass 1, and Bass 2. The music continues with similar melodic and rhythmic patterns, showing a steady progression of the composition.

77

Musical score system 3, measures 77-84. The system consists of four staves: Treble 1, Treble 2, Bass 1, and Bass 2. The music concludes this section with a final cadence, marked by a double bar line at the end of measure 84.

81

System 81: A four-staff musical score. The top staff (treble clef) contains a melody with eighth and sixteenth notes. The second staff (treble clef) contains a similar melody. The third staff (alto clef) and fourth staff (bass clef) contain a bass line with eighth and sixteenth notes. The system ends with a double bar line.

86

System 86: A four-staff musical score. The top staff (treble clef) contains a melody with eighth and sixteenth notes. The second staff (treble clef) contains a similar melody. The third staff (alto clef) and fourth staff (bass clef) contain a bass line with eighth and sixteenth notes. The system ends with a double bar line.

92

System 92: A four-staff musical score. The top staff (treble clef) contains a melody with eighth and sixteenth notes. The second staff (treble clef) contains a similar melody. The third staff (alto clef) and fourth staff (bass clef) contain a bass line with eighth and sixteenth notes. The system ends with a double bar line.

6

99

104

111

119

System 119: This system contains four staves. The first three staves (treble clef) show a melodic line with eighth and sixteenth notes, some beamed together. The fourth staff (bass clef) provides a harmonic accompaniment with a mix of eighth and sixteenth notes, including some chromatic movement. The system concludes with a double bar line.

126

System 126: This system contains four staves. The first staff (treble clef) features a complex, fast-moving melodic line with many beamed sixteenth and thirty-second notes. The second staff (treble clef) has a more active line with eighth and sixteenth notes. The third staff (bass clef) plays a steady eighth-note accompaniment. The fourth staff (bass clef) is mostly silent, with a few notes appearing towards the end of the system.

131

System 131: This system contains four staves. The first staff (treble clef) continues the fast, intricate melodic line from the previous system. The second staff (treble clef) has a line of eighth and sixteenth notes. The third staff (bass clef) plays a consistent eighth-note accompaniment. The fourth staff (bass clef) is mostly silent, with some activity at the very end of the system.

137

142

148

153 *pizz.*

154

155

156

157

158 *arco*

159

160

161

162

163

164

165

166

167

168

169

170

ADDENDUM F

String Quartet no. 1 I

Rachel Tomaningh

Adagio $\text{♩} = 70$

Violin I

Violin II

Viola

Violoncello

6

12

2

17

17

18

19

20

21

f

f

22

22

23

24

25

26

f

f

27

27

28

29

30

31

pp

pp

pp

pp

p

32

33

34

35

36

37

38

39

40

41

Vivace ♩ = 120

42

43

44

45

4

47

ff mf

53

p

59 Adagio $\text{♩} = 70$

p

63

mf
f
pizz.
arco
p
pp

71

arco
pizz.
p
mf
pizz.
arco
p
mf

76

Poco a poco accelerando e crescendo.....
arco
f
Poco a poco accelerando e crescendo.....
mf
Poco a poco accelerando e crescendo.....
arco
mf
Poco a poco accelerando e crescendo.....
p

6

80

ff

84

Vivo ♩ = 120

89

96

Musical score for measures 96-100. The score is in 2/4 time and features a piano (p) and a maracas (mar) part. The piano part has a melodic line with a key signature change to one flat (B-flat) in measure 98. The maracas part provides a rhythmic accompaniment. Dynamics include marcato (marcato) and mezzo-forte (mf).

101

Musical score for measures 101-104. The score continues with the piano and maracas parts. The piano part has a long melodic line spanning measures 101 and 102. The maracas part continues with a rhythmic pattern. Dynamics include marcato (marcato) and mezzo-forte (mf).

105

Musical score for measures 105-108. The score continues with the piano and maracas parts. The piano part has a melodic line with a key signature change to two flats (B-flat and E-flat) in measure 106. The maracas part continues with a rhythmic pattern. Dynamics include marcato (marcato) and mezzo-forte (mf).

8

109

Four staves of music. The first staff (treble clef) has a key signature of one sharp (F#) and a common time signature. It contains a complex melodic line with many beamed sixteenth and thirty-second notes. The second staff (treble clef) has a key signature of one sharp and contains a similar complex melodic line. The third staff (bass clef) has a key signature of one sharp and contains a complex melodic line. The fourth staff (bass clef) has a key signature of one sharp and contains a complex melodic line. The measures are 109, 110, 111, 112, and 113.

114

Four staves of music. The first staff (treble clef) has a key signature of one sharp and a common time signature. It contains a complex melodic line with many beamed sixteenth and thirty-second notes. The second staff (treble clef) has a key signature of one sharp and contains a complex melodic line. The third staff (bass clef) has a key signature of one sharp and contains a complex melodic line. The fourth staff (bass clef) has a key signature of one sharp and contains a complex melodic line. The measures are 114, 115, and 116.

117

Four staves of music. The first staff (treble clef) has a key signature of one sharp and a common time signature. It contains a complex melodic line with many beamed sixteenth and thirty-second notes. The second staff (treble clef) has a key signature of one sharp and contains a complex melodic line. The third staff (bass clef) has a key signature of one sharp and contains a complex melodic line. The fourth staff (bass clef) has a key signature of one sharp and contains a complex melodic line. The measures are 117, 118, 119, and 120.

121 Adagio $\text{♩} = 70$

Measures 121-125 of the musical score. The score is written for four staves (treble and bass clefs). The tempo is Adagio, with a quarter note equal to 70 beats per minute. The key signature has one flat (B-flat). The music features a melodic line in the upper staves and a harmonic accompaniment in the lower staves.

Measures 126-130 of the musical score. The score continues with the same instrumentation and key signature. The melodic line in the upper staves shows some chromatic movement, while the accompaniment remains steady.

Measures 131-135 of the musical score. The score concludes with a final cadence. The melodic line in the upper staves features a long, sustained note in the first measure, followed by a series of chords. The accompaniment provides a solid harmonic foundation.

10

136

136

137

138

139

Vivo $\text{♩} = 120$

139

140

141

142

143

144

144

145

146

147

148

151

155

Adagio ♩ = 70

rit. pont.

pp

pp

p

160

12

166

normale

mf

171

mf

ff

176

f

181

mp p mp p

Vivo $\text{♩} = 120$

187

ff f ff f ff f

193

14

190

Musical score system 1, measures 190-194. The system consists of four staves. The top two staves are in treble clef, and the bottom two are in bass clef. The key signature has two flats (B-flat and E-flat). The music features a complex melodic line in the upper staves and a more rhythmic, accompanimental line in the lower staves. The notation includes various note values, rests, and dynamic markings.

204

Musical score system 2, measures 204-208. The system consists of four staves. The top two staves are in treble clef, and the bottom two are in bass clef. The key signature has two flats (B-flat and E-flat). The music features a complex melodic line in the upper staves and a more rhythmic, accompanimental line in the lower staves. The notation includes various note values, rests, and dynamic markings. The word "cresc." is written in red above the top staff in measures 206 and 208, and below the bottom staff in measures 206 and 208.

209

Musical score system 3, measures 209-213. The system consists of four staves. The top two staves are in treble clef, and the bottom two are in bass clef. The key signature has two flats (B-flat and E-flat). The music features a complex melodic line in the upper staves and a more rhythmic, accompanimental line in the lower staves. The notation includes various note values, rests, and dynamic markings. The word "ff" is written in red below the top staff in measures 211 and 213, and below the bottom staff in measures 211 and 213.

String quartet no. 1

II

Lento $\text{♩} = 52$

Violin I

Violin II *mp*

Viola

Violoncello

5

mp

p

9

mf

f

2

14

18

22

26 3

mf *mf* *mp* *mp*

29

f *f* *f*

32

4

37 *Quasi Allegretto* ♩ = 116

Violin I: *mf*
Violin II: *mf*
Cello/Double Bass: *mf*
Bass: *ff*

43

Violin I: *f*
Violin II: *f*
Cello/Double Bass: *mf*
Bass: *ff*

49

Violin I: *f*
Violin II: *f*
Cello/Double Bass: *mf*
Bass: *ff*

55

System 55: A four-staff musical score. The top staff is a treble clef with a key signature of one flat (B-flat). The second and third staves are alto clefs. The bottom staff is a bass clef. The music features a complex rhythmic pattern with many beamed sixteenth and thirty-second notes. There are several accidentals, including flats and naturals. A bracket with the number '3' is placed over a group of notes in the second and third staves.

61

System 61: A four-staff musical score. The top staff is a treble clef with a key signature of one flat (B-flat). The second and third staves are alto clefs. The bottom staff is a bass clef. The music features a complex rhythmic pattern with many beamed sixteenth and thirty-second notes. There are several accidentals, including flats and naturals.

68

System 68: A four-staff musical score. The top staff is a treble clef with a key signature of one flat (B-flat). The second and third staves are alto clefs. The bottom staff is a bass clef. The music features a complex rhythmic pattern with many beamed sixteenth and thirty-second notes. There are several accidentals, including flats and naturals. Red markings are present: a red 'f' (forte) dynamic marking in the first staff, and red horizontal lines under the notes in the second, third, and fourth staves.

6

73 Lento $\text{♩} = 52$

mf mp mf

81

mf mp

85

90

93

String Quartet no. 1

III

Presto ♩ = 150 - 155

Violin I

Violin II

Viola

Violoncello

7

14

The musical score is for a String Quartet, Movement III, in Presto tempo (150-155 beats per minute). It is written for Violin I, Violin II, Viola, and Violoncello. The score is in 3/4 time and consists of three systems of music. The first system (measures 1-6) shows Violin I and II with fortissimo (ff) dynamics, and Viola and Violoncello with ff and mezzo-forte (mf) dynamics. The second system (measures 7-13) shows all instruments with various dynamics including ff, f, and mf. The third system (measures 14-19) shows Violin I and II with mf and f dynamics, and Viola and Violoncello with f dynamics. The score includes various musical notations such as notes, rests, and dynamic markings.

2

21

21

22

23

24

25

26

27

f

f

28

28

29

30

31

32

33

34

ff

ff

ff

f

mf

mf

mf

35

35

36

37

38

39

40

41

45

45 46 47 48 49 50 51 52 53 54

55

55 56 57 58 59 60 61 62 63 64

65

65 66 67 68 69 70 71 72 73 74

4

72

mf

mp

mf

mp

78

83

f

ff

f

f

f

ff

f

ff

89

89 90 91 92 93 94 95

mf *f* *mf*

96

96 97 98 99 100 101 102

mf *f* *f* *f*

103

103 104 105 106 107 108 109

f *f* *f* *f* *f* *f* *f*

6

108

108 109 110 111 112 113 114 115 116

117

117 118 119 120 121 122

123

123 124 125 126 127 128

131

System 131: This system contains measures 131 through 136. It features four staves: two treble clefs and two bass clefs. The music is in 4/4 time. Measures 131-135 show a complex melodic line in the first treble staff, with the second treble staff providing harmonic support. The bass staves have a more rhythmic, accompanimental role. A red *ff* (fortissimo) dynamic marking appears at the end of measure 136 on the first, second, and third staves.

138

System 138: This system contains measures 138 through 143. It continues the four-staff arrangement. The melodic line in the first treble staff becomes more active, with many sixteenth and thirty-second notes. The bass staves continue with a steady accompaniment. The system concludes with a double bar line at the end of measure 143.

143

System 143: This system contains measures 143 through 148. It continues the four-staff arrangement. The music shows a continuation of the melodic and harmonic themes established in the previous systems, with the first treble staff leading the melodic development. The system concludes with a double bar line at the end of measure 148.

8

152 **Lento** ♩ = 52

Violin I: *mp*, *pizz.*
 Violin II: *mp*, *pizz.*
 Viola: *mp*, *pizz.*
 Cello/Double Bass: *mp*, *pizz.*

158 **Adagio** ♩ = 70

Violin I: *mf*, *arco*
 Violin II: *mf*, *arco*
 Viola: *mf*, *arco*
 Cello/Double Bass: *mf*, *arco*

163

Violin I: *mf*, *mp*
 Violin II: *mf*, *mp*
 Viola: *mf*, *mp*
 Cello/Double Bass: *mf*, *mp*