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## Dragos Tanasescu's Treaties of Pianistic Technique

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DRAGOS TANASESCU'S *TREATISE OF PIANISTIC TECHNIQUE*

A Monograph

Submitted to the Graduate Faculty of the  
Louisiana State University and  
Agricultural and Mechanical College  
in partial fulfillment of the  
requirements of the degree of  
Doctor of Musical Arts

In

The School of Music

By

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## ABSTRACT

This study examines Dragos Tanasescu's fingering system and technical exercises presented in *Treatise of Pianistic Technique*. The *Treatise* contains four books, each one dedicated to a segment of technical problems. Tanasescu's main contribution to the piano technique is the application of math permutation formulas to create all possible arrangements of fingering patterns. His treatise continues previous technical approaches of A. Kullak, F. Liszt, J. Pischna, and E. Dohnanyi. Earlier methods organize the technical material by one principle: fingerings. The purpose of this study is to illustrate the characteristics of Tanasescu's fingering system presented in *Treatise of Pianistic Technique*, and provide insights from a historical and technical perspective.

The first chapter provides a succinct description of previous fingering systems of C. P. E. Bach, C. Czerny, A. Kullak, F. Liszt, E. Dohnanyi, and a brief presentation of the *Treatise of Pianistic Technique*'s four Books. Chapter Two contains an analysis of Tanasescu's main technical terms and principles. Chapter Three provides an analysis of all polyphonic exercises with two voices contained in Book III of Tanasescu's *Treatise*. Each exercise is compared with previous examples by Liszt, Pischna, and Dohnanyi. Chapter Four presents Tanasescu's new transposition method and its benefits. The last chapter provides a comparison between Tanasescu's polyphonic patterns and examples from the Classic and Romantic piano repertoire.

This study has been directed by Jennifer Hayghe, Associate Professor at Louisiana State University.

## CHAPTER ONE

### BACKGROUND OF FINGERING SYSTEMS

During the last two centuries, various fingering systems have primarily aimed for one goal: to help artist-pianists better express themselves. These systems were built upon previous technical and artistic experiences, and created a set of rules and principles to improve the performance of the next generations of artists. A new approach to piano technique will be presented in this monograph: Dragos Tanasescu's *Treatise of Pianistic Technique* (1985).

Tanasescu's intent was to introduce a fingering system that builds upon previous fingering systems and, enhanced by the application of mathematical formulas, to create every possible fingering combination. The term fingering system has been chosen rather than piano technique, because it connotes better the idea of a relationship between fingering patterns that are involved in the development of piano technique.

### Historic Overview of the Principal Fingering Systems

#### **C.P.E. Bach - *Essay on the True Art of Playing Keyboard Instruments***

The *Essay on the True Art of Playing Keyboard Instruments* by Carl Philipp Emanuel Bach (1714-1788) is the most important method book of the late eighteenth and nineteenth centuries. Earlier pedagogical methods for harpsichord and clavichord addressed the same artistic and technical issues as C.P.E. Bach, but in a less complete and organized manner. These methods include *Il Transilvano*, which was published in two parts, the first in 1593, the second in 1609, written by Girolamo Diruta (1554-1610); *The Art of Playing the Harpsichord*, published in 1716, written by Francois Couperin (1668-



1733); *Method for Finger Mechanics at the Harpsichord* published in 1724, and *Practical Music Guide* published in 1760, both written by Jean Philippe Rameau (1683-1764).

The *Essay on the True Art of Playing Keyboard Instruments* was published in two parts. The first part, written in 1753, encompasses a large range of technical and ornamentation problems and is an outstanding resource for the performance practices of the period. The second part, published in 1762, is a manual for composition and improvisation.

The opening statement of the introduction to Part One serves as a summary for the entire method:

The true art of playing keyboard instruments depends on the three factors so closely related that no one of them can, nor indeed dare, exist without others. They are: correct fingerings, good embellishments, and good performance.<sup>1</sup>

The first chapter, entitled “Fingering,” presents 99 rules and prescriptions for the most often used musical patterns. Bach recommends, for instance, strong fingers for accented notes and weaker fingers for unaccented notes; avoidance of the thumb and fifth finger on black keys (with some exceptions in the case of the thumb); scale fingering patterns that use both the thumb and a fingering that crosses fingers over each other. He suggests that scales with fewer sharps or flats have more than one fingering variant; standard double-note and octave fingerings that he recommends are still in use today. Bach also indicates that basic chords have alternate fingering recommendations. The central characteristic of the fingering method presented in the first chapter of *Essay on True Art of Playing Instruments* is the use of multiple fingering alternatives for every

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<sup>1</sup> Carl Philipp Emanuel Bach, *Essay on the True Art of Playing Keyboard Instruments*, trans. William J. Mitchell (New York: W.W. Norton & Company, Inc., 1949), 30.

technical/musical pattern in order to emphasize the particular expression of the pattern.

Rather than presenting a technical regimen, Bach suggests instead solutions to specific musical problems. Fingering efficiency is considered important for only one reason: to help convey musical expression. All fingering solutions are seen as facilitations to communicating expression, a principle that remains true for the next generations of fingering systems.

C. P. E. Bach's *Essay on the True Art of Playing Keyboard Instruments* is still one of the most important sources for fingering because it is forward-looking, covers a large number of technical problems that appear in the repertoire of the late eighteenth and early nineteenth centuries, and offers a clear explanation of the performance practices of that time.

**Carl Czerny - *Complete Theoretical and Practical Piano Forte School, from the First Rudiments of Playing to the Most Refined State of Cultivation; with the Requisite Numerous Examples, Newly and Expressly Composed for the Occasion.* Op. 500**

In addition to “correct” fingering recommendations, early nineteenth-century fingering systems developed separate exercises drawn from the repertoire for each technical pattern and difficulty in order to solve the problem and address the increased technical difficulties. In the nineteenth century, pedagogues and pianists concentrated on finding comprehensive fingering systems that covered all technical problems. They composed a huge number of exercises and studies. One of the first of these systems was compiled by Carl Czerny (1791-1857).

Carl Czerny's *Complete Theoretical and Practical Piano Forte School*, Op. 500, published in 1839, is one of the most important fingering systems and methods of the

nineteenth century. Among all Czerny's collections of studies and exercises that address in detail an enormous number of technical problems and have as a central feature the development of virtuosity, Op. 500 stands out in its consistency and theoretical completeness.

Op. 500 is organized in four volumes. The first volume deals with posture, hand position, the use of the arm, and types of touch that should differ from slower tempos to rapid tempos. Volume Two is dedicated entirely to fingerings and includes, in addition to hundreds of small exercises, twelve full-length etudes. Czerny describes each fingering rule in this volume. He sometimes recommends more than one fingering, if the solutions are equally comfortable, and discusses exceptions to various rules. For instance, in scales he advises avoiding the use of the thumb and the fifth finger on black keys, and does not stress the rule of regularity for transposing exercises. This rule prescribes keeping the original fingering when an exercise is transposed, because it may imply the use of the thumb on black keys for certain transpositions. Czerny does recommend that students transpose his exercises, but urges them to find the most accurate and comfortable fingering according to the rules previously stated in the volume. Czerny gives an important role to the thumb because of its horizontal agility, and advocates use of the thumbs as a replacement for any of the other fingers.

Volume Three deals with musical problems such as expression, tempo, transposition, improvisation and reading various clefs. Here, Czerny includes a historical overview of various playing styles: from Johann Sebastian Bach (1685-1750) to Joseph Haydn (1732-1809); the virtuosic school founded by Johann Nepomuk Hummel (1778-1837), Frederic Kalkbrenner (1785-1849) and Ignaz Moscheles (1794-1870); and the

“new” pianistic school that fuses all previous approaches, represented by Frederic Chopin (1810-1849), Franz Liszt (1811-1886), and Sigismond Thalberg (1812-1871). The fourth volume represents a prominent source of information about performance style and practice in Ludwig van Beethoven’s music.<sup>2</sup> As Beethoven’s pupil, Czerny provides in this volume fingerings, tempo markings and character indications, articulations, dynamics, and information regarding the publisher and the year when Beethoven’s piano works were published. Czerny discusses nearly all Beethoven’s piano sonatas, fantasias, themes with variations, rondos, violin and cello sonatas, trios and piano concertos, including Beethoven’s transposition of his violin concerto. In the Introduction of this fourth volume the editor Paul Badura-Skoda says the following:

It is one of music history’s fortunate coincidences that Beethoven’s pupil Carl Czerny was one of the greatest piano pedagogues. At a time when Beethoven’s works were hardly cultivated any more, fashion having taken other directions, Czerny did much to ensure that Beethoven tradition did not die out. He taught his pupils (among them the young Franz Liszt) to play Beethoven’s work: he arranged private concerts devoted exclusively to those works; and he made excellent two and four-hand transpositions, some of them under Beethoven’s supervision, of orchestral and chamber works, which were widely circulated in that form.<sup>3</sup>

The main features of Carl Czerny’s *Complete Theoretical and Practical Piano Forte School*, Op. 500, are clear identification of technical problems, separate exercises and fingerings to solve these problems, and a meticulous organization of material. While these features are common to all Czerny’s contemporaries including Muzio Clementi (1752-1832), Johann Baptist Cramer (1771-1838), Johann Nepomuk Hummel, and Henry Herz (1803-1888), Czerny’s work is the most thorough and comprehensive.

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<sup>2</sup> Carl Czerny, *On the Proper Performance of all Beethoven’s Works for the Piano*, edited by Paul Badura-Skoda (Wien: Universal Edition, 1970).

<sup>3</sup> Ibid, 1.

## **Adolph Kullak -*The Aesthetics of Pianoforte Playing***

*The Aesthetics of Pianoforte Playing* by Adolph Kullak (1823-1862), originally published in 1860, represents a unique approach to piano technique. Kullak's method is systematic and methodical in that the fixed elements of piano technique (fingering, white/black key patterns and hand positions) can be combined in any manner. Kullak systematically listed large components of his method to be practiced separately before combining them: (1) fingering combinations (2) white/black key patterns and (3) two basic positions (contracted/extended) that the hand can play on the keyboard.<sup>4</sup> For the first time in the nineteenth century, Kullak provided a list of fingering combinations that is close to a mathematical organization. For example, he listed possible combinations of two fingers (1-2, 1-3, 1-4, 1-5, 2-3, 2-4, 2-5, 3-4, 3-5, 4-5), possible combinations of three fingers (1 2 3, 1 2 4, 1 2 5, 1 3 4, 1 3 5, 1 4 5, 2 3 4, 2 3 5, 2 4 5, 3 4 5), combinations of four fingers (1 2 3 4, 1 2 3 5, 1 2 4 5, 1 3 4 5, 2 3 4 5), and combinations of five fingers (1 2 3 4 5).

These fingerings are not intended for double-notes or chords, but represent only separate single-finger combinations. These combinations represent all of the major fingering patterns that can be used by a pianist in learning exercises. Each of these major patterns can lead to a large number of distinct variants that are not listed. Kullak's recommendation to pianists was to explore variants and combinations through improvisation and transposition. However, a complete list of all of these fingerings variants cannot be achieved by only a simple combination of them. It requires a consistent application of a mathematical permutation formula to obtain all possibilities of finger combinations.

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<sup>4</sup> Adolph Kullak, *The Aesthetics of Pianoforte Playing*, (New York: G. Schirmer, 1893), 122.

At the beginning each hand must practice for some time alone; the perfection of the whole is greater, the more carefully the details are developed, ... in varying the combinations of figures found in the above five groups by repeating single or several constituent parts with doubled-notes, with all possible transpositions, in the form of three or four-part groups, it is not surprising that there is quite a large number of works, which contain nothing but finger exercises.<sup>5</sup>

This new approach to fingering patterns is discussed in the second part of Kullak's *The Aesthetics of Pianoforte Playing*. Fingering patterns represent only the beginning part of a very organized technical method that aims for a full development of the whole pianistic apparatus.

The second part of Kullak's *The Aesthetics of Pianoforte Playing* is entitled *On Technique* and contains eight chapters (IV-XI) dealing with technical problems. He emphasizes the importance of training the whole muscular system of the arm and the importance of the hand's position. Kullak offers a technical system of gradual involvement of all hand and arm joints and muscles. He begins in chapter IV, V, and VI with different touches, *legato-staccato*, with a fixed position, and continues with thumb under position in preparation for a freer moving arm in scales and scale-like passages. The next step, presented in chapter VII, is playing that involves wrist action and various touches using the wrist. In chapter VIII, there are presented the extended and contracted positions. Kullak recommends for these extended and contracted positions: chromatic scales, broken chords, double thirds, fourths, sixths, octaves and arpeggios. In chapter IX, he describes the use of the elbow joint and shoulder joint for octave technique, big leaps and jumps. The last chapter, *The Beautiful in Technique*, is dedicated to an aesthetic evaluation of the entire technical approach of piano playing. Kullak's method ends with a third part, *On the Rendering* that offers seven chapters on performance.

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<sup>5</sup> Ibid., 122.

Kullak's method of fingering organization most likely influenced Liszt's *Technical Exercises* (Volumes I and IX especially), the *Technical Studies* by Josef Pischna (1826-1896) and *Essential Finger Exercises* by Ernő Dohnanyi (1877-1960). All these exercises are structured using the same type of fingering arrangements and involve a large variety of rhythms and transpositions.

Compared with Czerny's method, Kullak's *The Aesthetics of Pianoforte Playing* does not provide a large number of technical exercises. His major improvement is that he encourages his students to invent and improvise passages and exercises on their own using fingerings patterns, and thus his approach establishes a new system for learning technical skills.

### **Franz Liszt - *Technical Exercises***

The set of rules that form Liszt's fingering system is evident in his etudes and piano pieces, but the organization of his system is better revealed in his *Technical Exercises*. These exercises were written between 1868 and 1880 and were not published during his lifetime. Compared to other fingering systems of the nineteenth century, Liszt's *Technical Exercises* represent the ultimate solution to the development of piano technique in this period. The characteristics that make this system so important are the following: an extremely clear presentation of basic technical patterns, an exhaustive organization of material that attempts to cover all fingering arrangements, and a wider span for transposing all these technical patterns into all tonalities.

Liszt's *Technical Exercises* are in twelve volumes, and each deals with a certain category of technical problems. The first volume presents polyphonic exercises. Seven different polyphonic patterns, with a very clear fingering structure are introduced. The

first pattern has a three-note chord in a fixed position and the remaining two fingers perform a trill (Example 1.1).<sup>6</sup>



Example 1.1. Liszt, *Technical Exercises*, exercise 6, m.1.

The second polyphonic pattern has a double-note in fixed position and the remaining three fingers are performing a melodic figure (Example 1.2).<sup>7</sup>



Example 1.2. Liszt, *Technical Exercises*, exercise 7, m.1.

In exercise 11 Liszt presents a new fingering of this polyphonic pattern formed by a double-note in fixed position, this time with fingers 1 and 5, and the remaining three fingers playing a melodic figure (Example 1.3).<sup>8</sup>

<sup>6</sup> Franz Liszt, *Technical Exercises for the Pianoforte*, (Port Washington: Alfred Music Co., Inc., 1971), 10.

<sup>7</sup> *Ibid.*, 11.

<sup>8</sup> *Ibid.*, 23.





Example 1.3. Liszt, *Technical Exercises*, exercise 11, m.3.

The third polyphonic pattern employs a finger in fixed position, and the remaining four fingers perform a melodic figure (Example 1.4).<sup>9</sup> This polyphonic exercise is practiced also with finger 1 in fixed position.

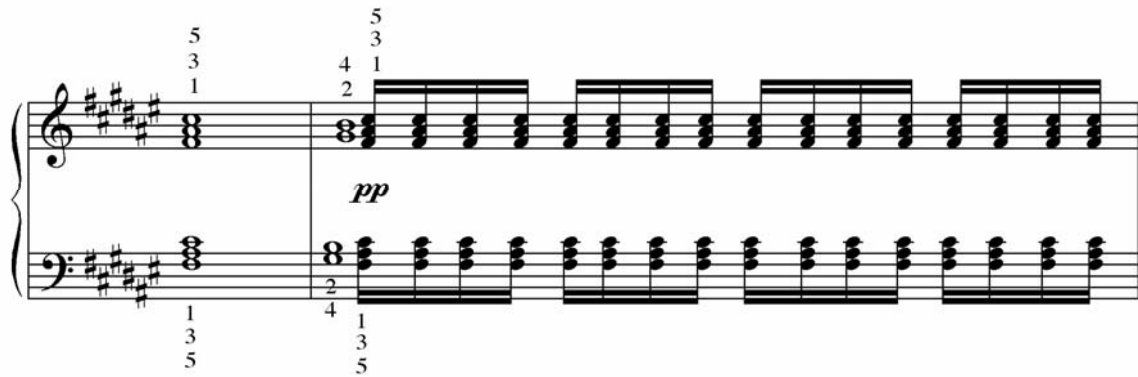


Example 1.4. Liszt, *Technical Exercises*, exercise 8, m.1.

In exercise 25 a new pattern is presented: a double note in fixed position and the remaining fingers repeating a three-note chord (Example 1.5).<sup>10</sup>

<sup>9</sup> Ibid., 12.

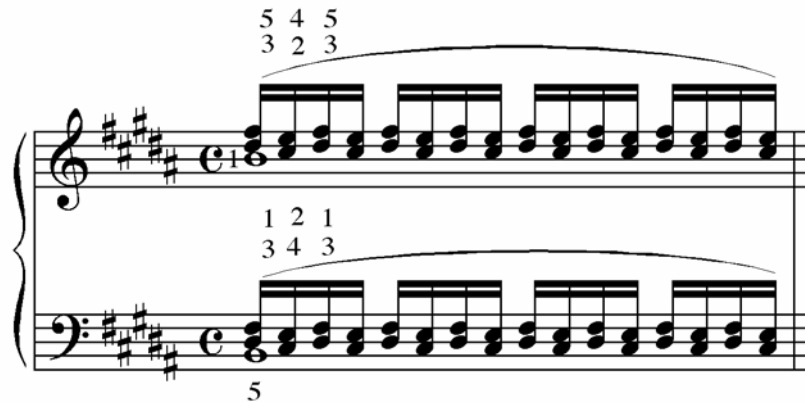
<sup>10</sup> Ibid., 25.



Example 1.5. Liszt, *Technical Exercises*, exercise 25, m.1-2.

This pattern is also presented in its inverted form: a three-note chord in fixed position and the remaining fingers playing a repeated double-note.

The next polyphonic pattern is formed by a finger in fixed position and a double-note trill (Example 1.6).<sup>11</sup>

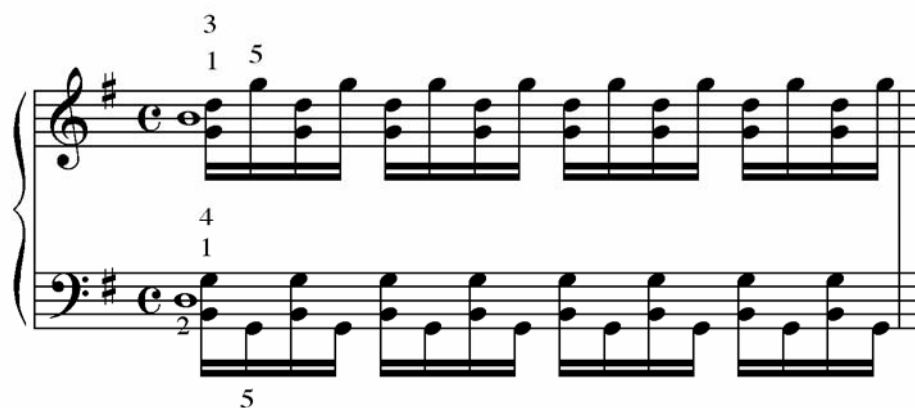


Example 1.6. Liszt, *Technical Exercises*, exercise 27, m.1.

The last polyphonic pattern practiced in this first volume is formed by a finger in fixed position and a trill between a double-note and a single finger (Example 1.7).<sup>12</sup>

<sup>11</sup> Ibid., 27.

<sup>12</sup> Ibid., 33.



Example 1.7. Liszt, *Technical Exercises*, exercise 35, m.1.

In total, the first volume presents seven distinct polyphonic patterns. It is one of the first examples of technical exercises organized by fingering patterns. The second volume deals with scale exercises. These exercises are not labeled with classic scale-fingerings. They use groups of two, three, four and five fingers. The third volume continues to present this technical problem and offers five exercises with scales in contrary motion. Volume Four deals with chromatic scales in parallel and contrary motion. These chromatic scales, similar to the exercises in the second volume, are labeled with groups of two, three, four and five fingers. The fifth and sixth volumes present exercises for double-notes, repeated double-notes, and parallel thirds and sixths. The seventh volume presents arm-technique exercises, chords and octaves. Volume Eight offers more exercises with octaves, broken octaves and four-note chords, double-note trills and polyphonic exercises. This volume makes the transition to volume Nine.

Volume Nine has two exercises. The first one, exercises 76, offers the most organized polyphonic exercises in the entire set. Exercise 77 addresses arpeggio technical problem. Exercise 76 is presenting only two different polyphonic patterns. Each of these

patterns uses all possible fingering arrangements for fixed positions and the playing voice. The first polyphonic pattern is formed by a fixed position on a double-note and the remaining three fingers playing a repeated chord. All ten double-note fingerings are used in a fixed position. The second polyphonic pattern continues to have a fixed position on a double-note but replaces the three-note chord with a trill between a double-note and a single finger. This pattern is also practiced in all ten fingering arrangements (Example 1.8).<sup>13</sup>



Example 1.8 Liszt, *Technical Exercises*, exercise 76, mm. 67-87.

These exercises present three characteristics that foreshadow the finger exercises of Dohnanyi and Tanasescu. They use a diminished seventh chord, ascending chromatically, with each new fingering variant of the pattern. They use only fingering to organize the technical material and are lacking any melodic or harmonic principles.

The tenth volume presents four exercises on broken chords. Volume Eleven contains two exercises that deal with double-note arpeggios and the twelfth volume offers three exercises for arm technique, octave and arpeggios with chords. Liszt's *Technical*

<sup>13</sup> Franz Liszt, *Technical Exercises for the Pianoforte*, (Port Washington: Alfred Music Co., Inc., 1971), 172-174.

*Exercises* illustrate a new concept of piano technique due to their increased amount of fingering patterns and wide range of transposition.

**Ernö Dohnanyi – *Essential Finger Exercises for Obtaining a Sure Piano Technique***

Ernö Dohnanyi (1877–1960) is considered one of the most important Hungarian musical figures. As a pianist, conductor, composer, and pedagogue, he influenced and shaped Hungary's musical life in the twentieth century. After a period of ten years of teaching at the *Hochschule* in Berlin (1905–1915), he returned in 1916 to Hungary and started teaching piano at the *Budapest Academy*. Dohnanyi, in 1917, elaborated a complete reform plan for the *Budapest Academy*. Between 1919 and 1921, Dohnanyi performed about 120 concerts each season in Budapest alone. He tried, by conducting and performing, to raise the public's musical tastes. As a conductor, Dohnanyi promoted Bartók's music long before others.

According to Bartók, Dohnanyi was providing the entire musical life of Hungary. The new generation – Bartók, Kodály, and Weiner – assembled behind him, and he championed their music and their cause above all.<sup>14</sup>

Dohnanyi conducted for many years the *Philharmonic Orchestra* in Budapest and for twenty-five consecutive years he was elected as chief conductor of the *Philharmonic Society*. In 1925 he was the chief conductor of the *New York State Symphonic Orchestra* and made extensive tours in the United States. In the following years he was appointed as head of the piano and composition classes at the *Budapest Academy* (1928), and as musical director of the Hungarian Radio (1934). In 1949 he became pianist and composer-in-residence at Florida State University in Tallahassee.

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<sup>14</sup> Bálint Vázsonyi, "Ernö Dohnanyi," in *The New Grove Dictionary of Music and Musicians*, second ed.

As a professor and pedagogue, Dohnanyi influenced many generations of musicians, his pupils including Georg Solti, Annie Fischer and Géza Anda. In 1929, one year after he was appointed as head of the piano and composition classes at the *Budapest Academy*, Dohnanyi published *Essential Finger Exercises for Obtaining a Sure Piano Technique*. His teaching philosophy is presented in the Preface of this method:

In music schools, piano tuition suffers mostly from far too much exercise material given for the purely technical development of the pupils, the many hours of daily practice spent on these not being in proportion to the results obtained. . . . far too many studies and exercises are given from which only little value can be gained, whilst not enough time is left for the study of repertoire pieces. . . . Therefore, before all else the amount of studies must be reduced and this can be done without harm if they are replaced by such exercises which, in lesser time, bring forth the same benefits. *Finger Exercises* are preferable to studies, if only for the reason that they can be practiced from memory, and consequently the whole attention can be concentrated on the proper execution, which is most important. . . . even Czerny is superfluous; it does not contain anything of essential importance which might not be acquired through finger-exercises, or by conscientious practicing of appropriate passages of pieces. The *Etudes* by Chopin and Liszt belong of course to the category of concert-pieces, and play a role as important, for higher and highest stages, as Bach's Two and Three Part Inventions . . . The less time spent on purely technical studies, the more important it is to practice with full concentrated thought. It is absolutely useless to practice exercises in a thoughtless, mechanical manner . . . in short: not to practice merely with the fingers, but through the fingers with the brain.<sup>15</sup>

Dohnanyi's technical concept is based upon the following principles: the efficiency of finger exercises versus regular etudes, the importance of conscious technical practice, and the importance of practicing fingering exercises from memory. In this way, through more efficient and more focused technical training, students are able to dedicate more time to learning repertoire.

Correct sense of style can however, only be furthered by a sufficient knowledge of musical literature. . . . A wide knowledge of musical literature can only be acquired by sight-reading. I cannot sufficiently recommend pupils to start early with sight-reading: piano as well as chamber music. . . . Much sight-reading has

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<sup>15</sup> Ernő Dohnanyi, *Essential Finger Exercises for Obtaining a Sure Piano Technique*, (Budapest: Boosey & Hawkes, 1950), 3-5.

however advantages, which are unfortunately not sufficiently considered. Independently of a wider knowledge of musical literature, thus acquired, the sense of style is improved, and it is also of use, in regard to technique, for the deftness and the surety of the fingers are increased.<sup>16</sup>

In conclusion, Dohnanyi considers sight-reading, together with finger exercises, among the primary methods of improving piano technique. The importance given to the combination of technical exercises with a more creative method, such as sight-reading, is similar to Kullak's improvisation with various finger patterns.

Dohnanyi's *Essential Finger Exercises* presents forty exercises that cover the principal technical problems: scales, arpeggios, trills and tremolos, double-notes, arm technique, and polyphonic textures. We will primarily focus on the polyphonic exercises that are presented in *Essential Finger Exercises*. Nine different polyphonic patterns are presented in the first eleven exercises. The first pattern has a three-note chord in a fixed position, and the remaining two fingers perform a trill (Example 1.9).<sup>17</sup>



Example 1.9. Dohnanyi, *Essential Finger Exercises*, exercise 1, m. 2.

The second polyphonic pattern has a double-note in fixed position, and the remaining three fingers are performing a melodic figure (Example 1.10).<sup>18</sup>

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<sup>16</sup> Ibid., 3-5.

<sup>17</sup> Ibid., 7.

<sup>18</sup> Ibid., 7.



Example 1.10. Dohnanyi, *Essential Finger Exercises*, exercise 1, m. 9.

The third polyphonic pattern is presented in the second exercise. It employs a finger in fixed position, and the remaining four fingers perform a melodic figure (Example 1.11).<sup>19</sup>



Example 1.11. Dohnanyi, *Essential Finger Exercises*, exercise 2, mm. 1-5.

The role of the fixed position is distributed to each finger from 1 to 5. It is one of the first finger exercises that present this polyphonic pattern with all fixed positions. Dohnanyi continues to develop variations of this polyphonic pattern in exercises 3, 4, 5, and 6. Dohnanyi presents in exercise 7 a new pattern: a fixed position distributed to a single finger, and the remaining fingers playing a trill formed by a double-note and a single finger (Example 1.12).<sup>20</sup>

<sup>19</sup> Ibid., 8.

<sup>20</sup> Ibid., 9.





Example 1.12. Dohnanyi, *Essential Finger Exercises*, exercise 7, mm. 1-2.

This polyphonic exercise is practiced only with two fingers in fixed position: 1 and 2.

In exercise 9 two more patterns are presented: a fixed position distributed to a single finger and the remaining fingers playing a repeated four-note chord and a fixed position distributed to a double-note, and the remaining fingers playing a repeated three-note chord (Example 1.13).<sup>21</sup>



Example 1.13. Dohnanyi, *Essential Finger Exercises*, exercise 9, m. 5 and m. 25.

The seventh polyphonic pattern is displayed in exercise 10. It distributes the fixed position to a double-note and the second voice to a trill formed by a double-note and a single finger (Example 1.14).<sup>22</sup>

<sup>21</sup> Ibid., 10.

<sup>22</sup> Ibid., 12.



The exercises have to be played *forte* with all possible strength, slowly and with well raised fingers, as well as *piano* in more rapid tempo. For training, the forte and slow practicing is more beneficial. To practice too slowly is waste of time. The most rapid tempo in which the exercises can be played faultlessly, gives best results.<sup>25</sup>

Dohnanyi's *Essential Finger Exercises* represents a step forward toward a clearer comprehension of piano technique. He introduces new technical concepts such as the efficiency of finger exercises versus regular etudes, a new understanding of conscious technical practice, and the practice of fingering exercises from memory. However, Dohnanyi hopes only that these exercises will prove useful.

In the following exercises, I have endeavored to collect material in condensed form, yet as complete as possible, which should help piano students to acquire a reliable technique. They are even all-sufficient for finished pianists to keep in training, and to retain the already acquired technique. Many exercises are new, they do not however lay any claim either to originality or beauty. I hope, withal, that they will prove useful.<sup>26</sup>

### **Dragos Tanasescu – *Treatise of Pianistic Technique***

Dragos Tanasescu (b. 1933) published his treatise in 1985 and it represents the work of more than fifteen years. The treatise<sup>27</sup> was published by the Ciprian Porumbescu Conservatory, now called the Bucharest Music Academy. Dragos Tanasescu was a Piano and Pedagogy Professor at the Ciprian Porumbescu Conservatory for almost thirty years. Tanasescu also published several articles and studies about the famous Romanian pianist Dinu Lipatti (1917-1950). The most acclaimed is the book entitled *Lipatti*.<sup>28</sup> This study is considered the most comprehensive work in English about the brilliant pianist. Tanasescu

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<sup>25</sup> Ibid., 6.

<sup>26</sup> Ibid., 5.

<sup>27</sup> All translations from Romanian to English have been made by the author of this monograph.

<sup>28</sup> Dragos Tanasescu, *Lipatti*, trans. Carola Grindea (London: Kahn & Averill, 1988).

was a pupil of one of the most important Romanian professors of the twentieth century, Constanta Erbiceanu.

Fragments of Tanasescu's treatise and separate exercises were published prior to 1985, but the complete work was published in 1985.<sup>29</sup> It contains four volumes:

- Book I, titled *Methodical Principles and Indications*, presents theoretical explanations together with short examples and exercises. In this book the principal characteristics of his fingering system are also introduced.
- Book II, *Finger Technique: Movement Relations*, presents exercises resembling classic scales, arpeggios, double-note and chord exercises.
- Book III, *Finger Technique: Movement Correlations*, represents the core of the treatise. This volume presents polyphonic exercises that exhaustively practice all finger combinations and polyphonic patterns by using mathematical permutations.
- Book IV, *Arm Technique*, is dedicated to various octave exercises that share the same completeness as the finger exercises but deal with large arm motion patterns across the keyboard.

Tanasescu's *Treatise* shares three common characteristics with classic fingering systems. First, it presents separately and with gradually increased degree of difficulty each technical problem: scales, arpeggios, extensions, double-notes, chords and octaves for wrist and arm technique. This approach is similar to those found in the nineteenth century fingering systems of Czerny, Kullak, Liszt, Pischna and Dohnanyi, wherein each separate technical problem is approached gradually. Second, Tanasescu prescribes the

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<sup>29</sup> Dragos Tanasescu, *Treatise of Pianistic Technique*, (Bucharest: Ciprian Porumbescu Conservatory, 1985).

transposition of exercises to a wide range of white/black key patterns. He considers the practice of comprehensive transposition for piano technical development essential.

Transposition was one of the main characteristics of previous fingering systems of Kullak and Liszt. Third, Tanasescu's approach involves creativity and implicit mental concentration, in order to master a continuous change of technical patterns. The importance of this issue is addressed from the very beginning of his *Treatise*.

While Tanasescu's *Treatise* shares these characteristics, it also improves upon earlier systems. With the use of math permutation formulas, all technical patterns are explored and practiced. In this way the technical problems are better organized and able to be mastered. Due to the high degree of organization, the technical patterns are able to be transposed to a wider range of white/black key patterns. The mathematical organization of these exercises unites two different characteristics of classic finger exercises: mastering technical problems combined with transposition, and a permanent change in technical and rhythmic patterns, making mental concentration an indispensable condition in the practice of these exercises.

## CHAPTER TWO

### TERMS AND PRINCIPLES IN DRAGOS TANASESCU'S *TREATISE OF PIANISTIC TECHNIQUE*

#### Technical Terms

##### Letters

Dragos Tanasescu introduced new technical terms in his *Treatise* in order to provide a more precise description of his exercises and a coherent theoretical analysis. This organized technical material requires a clear terminology to explain its structure. In the theoretical explanations presented in the first volume, *Methodical Principles and Indications*, Tanasescu uses the term “letter” instead of the word “finger” or “fingerings.” He identifies thirty-one distinct “letters” or fingerings, and these fingerings encompass the “technical alphabet.” For instance, the term “simple-letters” (1, 2, 3, 4, 5) applies to exercises in which fingers only play separately. All combinations of two, three, four, and five fingers are displayed in scale and arpeggio-like exercises. This feature makes them resemble a more classical type of exercise.

In transposition, these exercises employ various white/black key tonality patterns. A wide range of polyrhythmic patterns between hands is also used.

These groups of exercises resemble the technical fingering patterns presented by Kullak in his method. Kullak lists four different types of fingering patterns that can utilize separate fingers: (1) ten groups of two fingers, (2) ten groups of three fingers, (3) five groups of four fingers, and (4) one group of five fingers. Tanasescu applies permutation formulas to these groups of fingering patterns and produces all possible

combinations of two, three, four, and five fingers. In this way, all groups of fingering patterns can be identified, practiced consciously, and better mastered.

A permutation, also called an “arrangement number” or “order,” is a rearrangement of the elements of an ordered list  $S$  into a one-to-one correspondence with  $S$  itself. The number of permutations on a set of  $n$  elements is given by  $n!$  For example, there are  $2! = 2 \cdot 1 = 2$  permutations of  $\{1,2\}$ , namely  $\{1,2\}$  and  $\{2,1\}$ , and  $3! = 3 \cdot 2 \cdot 1 = 6$  permutations of  $\{1,2,3\}$ , namely  $\{1,2,3\}$ ,  $\{1,3,2\}$ ,  $\{2,1,3\}$ ,  $\{2,3,1\}$ ,  $\{3,1,2\}$  and  $\{3,2,1\}$ .<sup>1</sup>

Mathematical permutation provides the rule that organizes all these patterns of single fingers. The comparison between Kullak’s method recommending improvisation to produce different technical patterns and Tanasescu’s exercises reveals that the latter, unlike the former, offers a structure that contains all possible combinations of fingering patterns. Tanasescu organizes these fingerings into complete technical patterns; consequently, this increases awareness of what fingerings are being used, and develops the pianist’s attention. Recent studies have shown that the use of conscious fingering rules in piano exercises leads to a rapid improvement in both performance and sight-reading.<sup>2</sup>

The term “double-letters” describes all double-note exercises contained in Tanasescu’s *Treatise*. Tanasescu’s double-note exercises use all ten double-note fingerings: 12, 13, 14, 15, 23, 24, 25, 34, 35, 45. Similar to simple fingerings, they provide all possible combinations of double-note fingering patterns by the application of a math permutation formula. All technical systems acknowledge the importance of this technical problem and dedicate a multitude of studies and exercises to address it.

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<sup>1</sup> Eric W. Weisstein, “Permutation.” *MathWorld*, [web site]. Available from “<http://mathworld.wolfram.com/Permutation.html>.” Internet. Accessed on 13 April 2005.

<sup>2</sup> J. Sloboda, “Determinants of Fingering Choice in Piano Sight-Reading,” *Journal of Experimental Psychology: Human Perception & Performance* 24 (1998):1.

However, there are only a few earlier methods that attempt to organize this technical material in a comprehensive manner.

The term “triple letter” refers to the three-note chord exercises included in Tanasescu’s second volume.<sup>3</sup> The three-note chord fingerings are the following: 123, 124, 125, 134, 135, 145, 234, 235, 245, and 345. These exercises present, due to mathematical permutations, all possible combinations among three-note chord fingerings. Previous fingering systems address this technical problem in both arm technique and polyphonic exercises. However, in previous fingering systems the problem of chord technique has been approached primarily through the use of arm technique. The double nature of chord fingering patterns, viewed as chords or as a polyphonic texture, provides more alternatives for organizing the group of chord patterns as a whole. Tanasescu’s chord exercises equally consider both aspects of this technical problem. His chord exercises with polyphonic texture are able to reveal the web of voices that can exist among the three-note chord fingerings.

The term “quadruple letter” refers to exercises that use four-note chord fingerings. There are only five different fingering patterns: 1234, 1235, 1245, 1345, and 2345. These represent a small but very important technical pattern group. The term “quintuple letter” describes the five-note chord group: 12345 and is used more often in fixed positions.

All these terms refer to fingering patterns: simple fingerings, double-note fingerings, three, four, and five-note chord fingerings. All of them constitute what

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<sup>3</sup> In this monograph, fingerings are written respecting the following rules. All single fingers are written as single-digit numbers: 1,2,3,4, etc. The double-note fingerings are written as double-digit numbers: 12, 13, 14, 15, etc. The three-note chord fingerings are written as triple-digit numbers: 123, 124, 125, 134, etc. The trill fingerings are written as digit numbers separated by a hyphen: 1-2, 2-3, or a trill between a single finger and a double-note: 2-45, or a trill between a double-note and a three-note chord 23-245, etc.

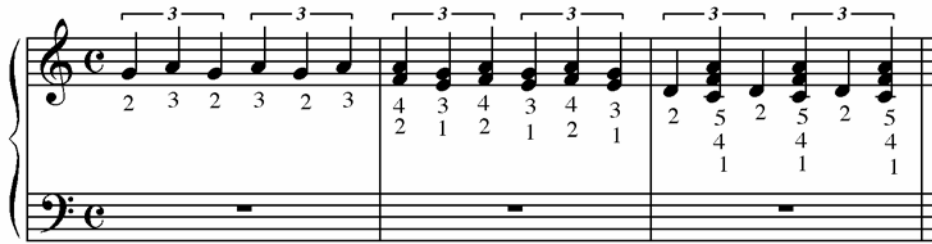


Tanasescu calls “the technical alphabet.” All of the fingering patterns form the complete number of combinations of these technical patterns using math permutations.

The next group of terms introduced by Tanasescu refers to the type of relationships among these fingering patterns.

## Cells

The term “technical cell” describes the relationship between two fingers or two fingerings, for example, a trill between finger 2 and 3, or a trill between two double-notes, 24 and 35, or a trill between a finger and a chord, 2 and 145 (Example 2.1).<sup>4</sup>



Example 2.1. Tanasescu, *Treatise*, “Technical cells.”

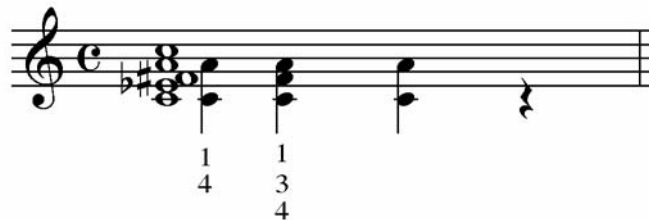
Tanasescu writes exercises that practice trills among all types of fingering patterns, single fingers, double-note, three-note chords, and four-note chords (Table 2.1).

<sup>4</sup> Dragos Tanasescu, *Treatise of Pianistic Technique*, (Bucharest: Ciprian Porumbescu Conservatory, 1985), iii-vi.

Table 2.1 Overall structures of trill exercises among all fingerings

	Trills between <b>Single fingers</b>	Trills between <b>Double- notes</b>	Trills between <b>Three-note Chords</b>	Trills between <b>Four-note Chords</b>	
Single fingers	<b>Single fingers/</b> Single fingers				
Double- notes	<b>Single fingers/</b> Double- notes	<b>Double- notes/</b> Double- notes			
Three-note chords	<b>Single fingers/</b> Three-note chords	<b>Double- notes/</b> Three-note chords	<b>Three-note Chords/</b> Three-note chords		
Four-note chords	<b>Single fingers/</b> Four- note chords	<b>Double- notes/</b> Four-note chords	<b>Three-note Chords/</b> Four-note chords	<b>Four-note Chords/</b> Four-note chords	

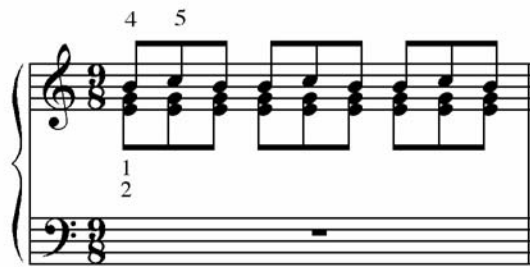
These exercises combine each type of fingering and exhaustively produce all types of trills. A fixed position is used in those cases where a smaller group of fingers is included in a larger one, for example, in the trill between a double-note and a three-note chord: 14-134 (Example 2.2).<sup>5</sup>



Example 2.2. Trill between a double-note and a three-note chord

<sup>5</sup> Ibid., iii-vi.

In the trill exercises that use three-note chord fingerings, a polyphonic correlation is revealed. Two chord fingerings played as a trill can have either two fingers in common or one finger in common. These trill exercises between two chord fingerings can be interpreted as a two-voice texture. The first polyphonic pattern has the first voice playing a trill and the other voice playing a repeated double-note, for example, a trill between 124-125 (Example 2.3).<sup>6</sup> The double-note 12 is playing with each of the trill fingers 4-5.



Example 2.3. Trill between two three-note chords  
with a double-note in common

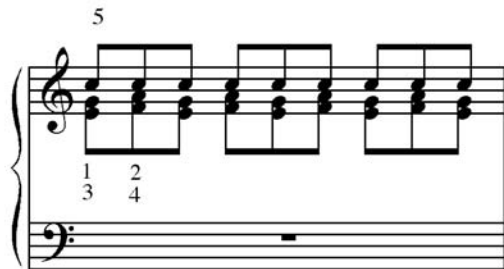
Table 2.2 illustrates all possibilities of three-note chord trills with a double-note in common. The trills 1-2, 1-3, etc., are played with each double-note on their column. The trill with single fingers 1-2 forms with the double-note 34 the three-note chord trills 134-234, or with the next double-note 35 it forms the three-note chord trills 135-235, and so on.

<sup>6</sup> Ibid., vii-x.

Table 2.2. Overall structure of three-note chord trills with a double-note in common.  
The chords are formed by playing every double-note with each finger of the trill.

	First voice – single finger trills									
	1-2	1-3	1-4	1-5	2-3	2-4	2-5	3-4	3-5	4-5
Second Voice double-notes.	34	24	23	23	14	13	13	12	12	12
	35	25	25	24	15	15	14	15	14	13
	45	45	35	34	45	35	34	25	24	23

The second polyphonic pattern has a voice playing a trill between two double-notes and the other voice playing a repeated note, for example, a trill between chord fingerings 135-245 (Example 2.4).<sup>7</sup>



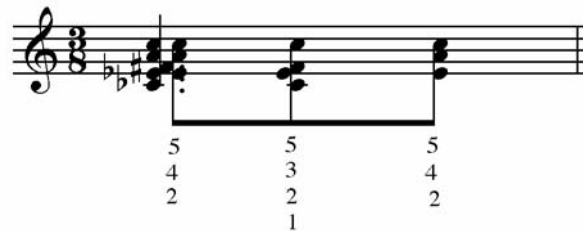
Example 2.4. Trill between two three-note chord  
with a single finger in common

Tanasescu recommends these two types of chord exercises in preparation for the polyphonic exercises in Book III.

The second volume of Tanasescu's *Treatise (Finger Technique – Movement Relations)* ends with an exercise that provides a complete index of all possible trills that can be performed among all types of fingering. Certain trills included in this exercise are

<sup>7</sup> Ibid., xi-xii.

often used and do not need special attention. Other trills, like the chord fingerings 124-235 or 245-1235 are less used and “their existence needs to be acknowledged” and they need to be practiced<sup>8</sup> (Example 2.5).



Example 2.5. Trill between a three-note chord and a four-note chord.

In fingering systems by Liszt, Pischna and Dohnanyi, trill practice occupies a very important place, especially in exercises with polyphonic textures. However, these exercises do not encompass a large range of different fingering combinations.

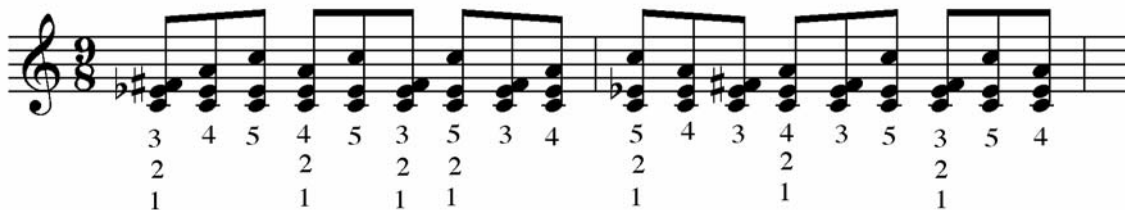
## Units

Tanasescu defines a “technical unit” as a group of three, four or five fingerings that presents all possible arrangements using a math permutation formula. Previous examples of exercises that intended to practice a larger number of finger arrangements can be found in methods by Kullak, Liszt and Dohnanyi. For example, Kullak organizes the four-finger groups in five different basic patterns: 1-2-3-4, 1-2-3-5, 1-2-4-5, 1-3-4-5 and 2-3-4-5. He recommends that his students improvise using these basic four-finger groups.

<sup>8</sup> Dragos Tanasescu, *Treatise of Pianistic Technique*, (Bucharest: Ciprian Porumbescu Conservatory, 1985), v.

The use of math permutation formulas increases awareness and diminishes the routine that so often accompanies regular finger exercises. This type of conscious practice is indispensable for Tanasescu's exercises, due to the permanent change of finger patterns. Studies have shown that conscious control of fingerings improves technical skills better than repetitive exercises that contain fewer fingering patterns and less conscious awareness.<sup>9</sup>

Table 2.3 illustrates an example of a technical unit exercise. This exercise uses groups of three chord fingerings. In order to produce all groups of three chord fingerings, the scheme respects the following structure.<sup>10</sup> Each group of two chord fingerings, 123-124 or 123-125, is taken separately with each of the other chord fingerings listed in columns, forming groups of three chord fingerings. For example, the group of chord fingerings 123-124 is taken with the chord fingering 125 producing the group: 123-124-125 (Example 2.6).



Example 2.6. The three-note chord fingerings 123 – 124 – 125. These three chords are combined in all six possible arrangements using a math permutation formula of three.

<sup>9</sup> I.G.Meister, "Playing Piano in Mind – an fMRI Study on Music Imagery and Performance in Pianists," *Cognitive Brain Research* 19 (2004): 219.

<sup>10</sup> The math permutation formula that calculates all three chord groups is a ratio.  $10!/3! = 720$  different groups of three chord fingerings, where 10 is the total number of chord fingerings and 3 the number of fingerings in each group.

Table 2.3. Overall structure of technical unit exercise with three-note chord fingering

	<b>The groups of two chord fingerings</b> each group is taken with each of the other chord fingerings listed in columns								
	<b>123- 124</b>	<b>123- 125</b>	<b>123- 134</b>	<b>123- 135</b>	<b>123- 145</b>	<b>123- 234</b>	<b>123- 235</b>	<b>123- 245</b>	<b>124- 125</b>
the chord fingerings that help form the groups of three chords	125	134	135	145	234	235	245	345	134
	134	135	145	234	235	245	345		135
	135	145	234	235	245	345			145
	145	234	235	245	345				234
	234	235	245	345					235
	235	245	345						245
	245	345							345
	345								

The exercise continues with the group of chord fingerings 124-125 listed in the last position. Similar to the previous two chord fingering groups (123-124, 123-125, etc.) illustrated in the first row, the group of chord fingerings 124-125 is taken separately with each of the other fingerings listed in its column, forming groups of three chords.

### Technical Pattern

In *Theoretical Explanations*, Tanasescu makes the distinction between “technical problems,” and “technical patterns.” In his view, the term “technical pattern,” represents the whole number of fingering combinations that make up a single scheme. For example, in Clementi’s *Gradus ad Parnassum*, *Etude* No. 85, the left hand plays a broken octave pattern with fingers 1 and 5 while fingers 2 and 3 are holding a fixed position (Example 2.7).<sup>11</sup>

<sup>11</sup> Muzio Clementi, *Gradus ad Parnassum*, (New York: Edwin F. Kalmus, 1971), 58.



Example 2.7. Clementi, *Gradus ad Parnassum*, *Etude* 85, mm. 1-4.

In a different etude by Clementi, the right hand plays a melodic line with fingers 1 and 2 while fingers 3 and 5 are in a fixed position (Example 2.8).<sup>12</sup>



Example 2.8. Clementi, *Gradus ad Parnassum*, *Etude* 33, m. 1.

These two polyphonic patterns can be found in Tanasescu's *Treatise* in one single exercise, even if they represent two different technical problems. In Tanasescu's view these two polyphonic patterns make up one single fingering scheme: a double-note in fixed position and the remaining fingers playing a melodic line.

<sup>12</sup> Ibid., 20.



## **Movement Relations and Movement Correlations**

Tanasescu uses the term “movement relations” to describe the trill, scale, arpeggio, and arm technique exercises presented in his *Treatise*. Some of these exercises use a math permutation formula to produce all fingering arrangements of these technical patterns.

Tanasescu refers to polyphonic exercises as “movement correlations.” These exercises use two or more different meters and different dynamics in order to improve finger independence. Tanasescu’s *Treatise* presents nine different polyphonic patterns with two voices. These exercises provide all two-voice polyphonic patterns that can be performed. Most of these polyphonic patterns have been presented in Liszt’s and Dohnanyi’s exercises, but none of them covers the complete number of possible fingering arrangements. Tanasescu presents in the third Book of his *Treatise* six polyphonic exercises with more than two voices: four exercises with three voices, one exercise with four voices, and one with five voices.

## **Symmetric Fingerings**

Due to the complete number of fingering arrangements, symmetric fingerings between hands are more noticeable in Tanasescu’s exercises than in Liszt’s and Dohnanyi’s. Axes of symmetry are formed among the fingerings of a technical pattern played by one hand and also between hands that perform the complete technical pattern in parallel and contrary motion. These axes of symmetry can be used to perform inversion, retrograde, and retrograde-inversion variants of the primary set of a technical pattern. They create more possibilities for transposition, other than tonal white/black key patterns (Example 2.9).



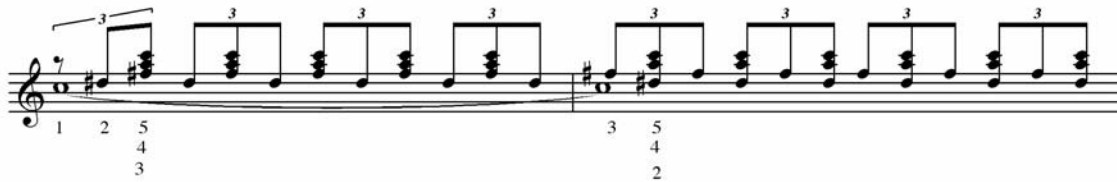
Example 2.9. Symmetric three-note chord fingerings between the right and the left hand.

## Technical Principles

### Use of Math Permutation Formulas to Organize Fingerings

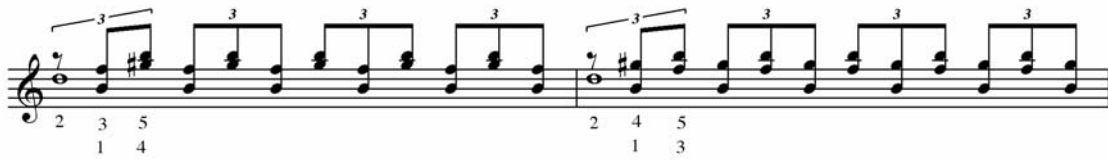
The main characteristic of Tanasescu's exercises is the use of math permutation formulas to organize fingerings into technical patterns. Similar to exercises by Liszt, Pischna, and Dohnanyi, Tanasescu's exercises are lacking any melodic, harmonic, or formal organization principles. All these methods are organized by one single principle: fingering. However, due to the large number of finger arrangements, Tanasescu uses math permutation formulas in his exercises to arrange the fingerings into technical patterns. As a result, these exercises have a clear fingering scheme, and they do not need a printed score in order to be learned. A comparable example can be found in Dohnanyi's polyphonic exercises. Dohnanyi systematizes the score of some of his exercise into a fingering table. This table illustrates the order of the fingering patterns and helps the performer to memorize the exercise. Once the order of fingering patterns is understood, the printed score is needless. For example, in exercise 11 Dohnanyi presents two polyphonic patterns. The first pattern has the fixed position distributed to a single finger

and the second voice playing a trill between a three-note chord and a single finger (Example 2.10).<sup>13</sup>



Example 2.10. Dohnanyi, *Essential Finger Exercises*, exercise 11, mm. 1-2.

The second pattern has the fixed position distributed to a single finger and the second voice playing a trill between two double-notes (Example 2.11).<sup>14</sup>



Example 2.11. Dohnanyi, *Essential Finger Exercises*, exercise 11, mm. 13-14.

Dohnanyi illustrates in his table only the fixed position and the first trill fingerings. For example for the trills between a single finger and a three-note chord (2-345) he writes only the single finger: 2. For the trills between two double-notes (23-45) he writes only the first double-note: 23 (Table 2.4).

<sup>13</sup> Ernő Dohnanyi, *Essential Finger Exercises for Obtaining a Sure Piano Technique*, (Budapest: Boosey & Hawkes, 1950), 14.

<sup>14</sup> Ibid., 14.

Table 2.4. Dohnanyi's fingering scheme for exercise 11.  
Playing voice in each column presents only the first finger(s) for trills.

<b>Fixed Positions – Five Fixed Positions Distributed to Each Finger</b>					
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Playing voice of first pattern - first trill fingers	2	1	1	1	1
	3	3	2	2	2
	4	4	4	3	3
	5	5	5	5	4
Playing voice of second pattern - first double-notes	23	13	12	12	12
	24	14	14	13	13
	25	15	15	15	14

In the Preface to his *Essential Finger Exercises*, Dohnanyi says the following:

*Finger Exercises* are preferable to studies, if only for the reason that they can be practiced from memory, and consequently the whole attention can be concentrated on the proper execution, which is most important.<sup>15</sup>

Conscious practicing of complete fingering patterns where focused attention is the essential factor represents also the central idea of Tanasescu's *Treatise*.

The benefits of highly organized technical material are numerous. The complete utilization of every fingering pattern better develops the skill of adapting them to a wider range of white/black key patterns. The conscious use of fingering formulas, along with more focused attention due to the lack of repetition, provides stimulating interrelation with other musical skills usually involved in technical training: improvisation, transposition and sight-reading.

### **Transposition in Tanasescu's *Treatise***

Previous fingering systems used transposition in technique exercises to improve and make fingering patterns more adaptable to new white/black keyboard positions. Kullak,

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<sup>15</sup> Ibid., 3.

Liszt, Pischna, and Dohnanyi recommend transposition for their exercises. For example, Kullak says in his method:

... in varying the combinations of figures found in the above five groups by repeating single or several constituent parts with doubled notes, with all possible transpositions, in the form of three or four-part groups, it is not surprising that there is quite a large number of works.<sup>16</sup>

Liszt either indicates certain exercises to be transposed only to some tonalities with difficult white/black key patterns, as in the second volume, or he writes out the same exercises in all tonalities, as in the remaining volumes. Pischna recommends transposition to all tonalities for all his exercises. Dohnanyi, similar to Liszt, indicates that some exercises are to be practiced in all other keys and other exercises should be transposed only to those tonalities where the white/black key patterns are more difficult and useful to be practiced.

Tanasescu recommends that his exercises be transposed to all tonalities. He introduces other white/black key patterns, such as certain intervals (half-steps, whole-steps, etc.), certain seventh chords and different harmonic combinations between hands. He also recommends a new type of transposition that implies a new arrangement of the whole fingering pattern. This operation resembles mapping pitch-class sets and twelve-tone series inside the circle of twelve pitches. When a twelve-tone series is transposed or inverted, the content remains the same, but in a different order. Tanasescu maps the first arrangement of fingering inside the pattern. He makes it have the same order but starts with a different finger or group of fingers. This process of mapping fingerings in Tanasescu's exercises employs the same basic procedure of transposition--enhancement of known information without monotonous repetition.

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<sup>16</sup> Adolph Kullak, *The Aesthetics of Pianoforte Playing*, (New York: G. Schirmer, 1893), 122.

## CHAPTER THREE

### MOVEMENT CORRELATIONS – POLYPHONIC EXERCISES

This chapter presents the group of polyphonic exercises included in Book III *Movement Correlations*. These exercises represent the core of Tanasescu's *Treatise* because they address the technical problems of polyphonic patterns and finger independence with a new approach. They logically continue in the tradition of exercises by Liszt, Pischna, and Dohnanyi. However, they improve upon earlier fingering systems by exhaustively generating all polyphonic patterns using math permutation formulas. In comparison with previous systems, Tanasescu's polyphonic exercises present a new characteristic: they practice a large range of rhythmical patterns between the voices of the same hand in order to enhance finger independence. These exercises are designed to be practiced with dynamic differences between voices. Many of these exercises will be compared with previous exercises by Pischna, Liszt, Dohnanyi.

#### Tanasescu's Polyphonic Exercises with Two Voices

Tanasescu identifies nine different polyphonic patterns with two voices. The group of polyphonic exercises with two voices can be divided into four large subsets.

- **First Subset**

The first subset of exercises distributes the first voice to a finger in fixed position and the playing voice to the remaining four fingers. The playing voice can perform only four different finger-arrangements: (1) a pattern of four single fingers (Example 3.1),<sup>1</sup> (2)

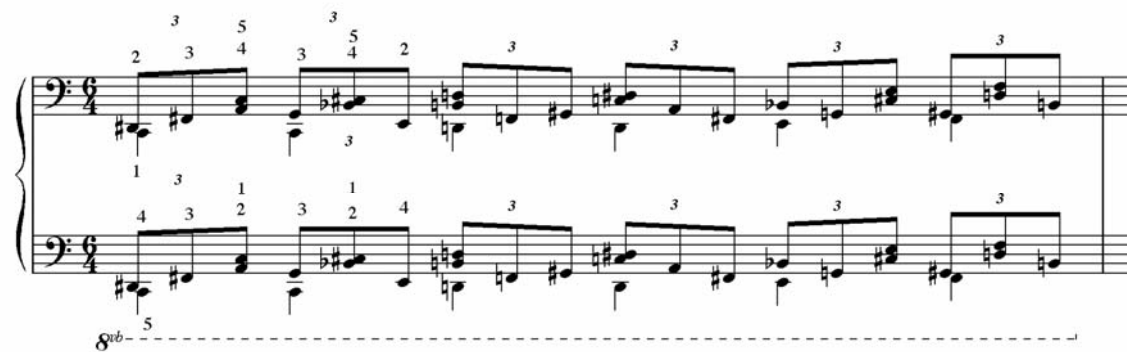
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<sup>1</sup> Dragos Tanasescu, *Treatise of Pianistic Technique*, (Bucharest: Ciprian Porumbescu Conservatory, 1985), 2.

a pattern of a double-note and two single fingers (Example 3.2),<sup>2</sup> (3) a group formed by a chord and a single finger (Example 3.3),<sup>3</sup> and (4) a trill of two double-notes (Example 3.4).<sup>4</sup>



Example 3.1. Tanasescu, *Treatise*, First subset. Polyphonic exercise No.1.



Example 3.2. Tanasescu, *Treatise*, First subset. Polyphonic exercise No. 2.

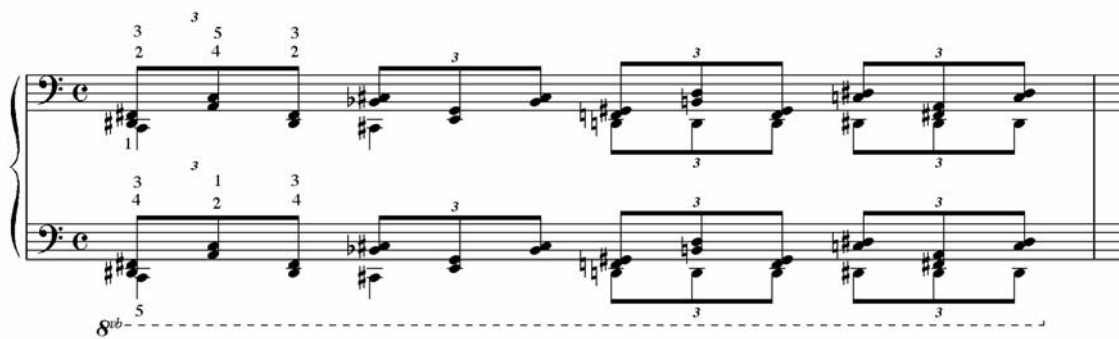
<sup>2</sup> Ibid., 9.

<sup>3</sup> Ibid., 22.

<sup>4</sup> Ibid., 38.



Example 3.3. Tanasescu, *Treatise*, First subset. Polyphonic exercise No. 3.



Example 3.4. Tanasescu, *Treatise*, First subset. Polyphonic exercise No. 4.

- **Second Subset**

In the second subset, the first voice is distributed to a double-note in fixed position and the playing voice to the remaining three fingers. The playing voice has two finger-arrangements. The first arrangement distributes the first voice to a double-note in fixed position and the second voice to the remaining three fingers as a melodic figure (Example 3.5).<sup>5</sup>

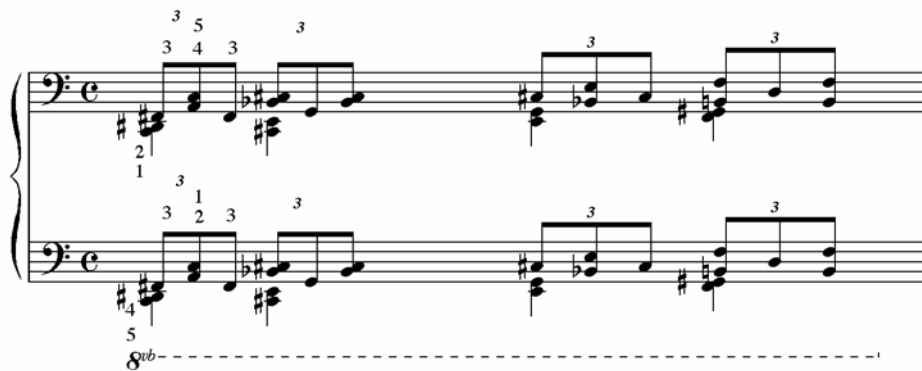
<sup>5</sup> Ibid., 48.





Example 3.5. Tanasescu, *Treatise*, Second subset. Polyphonic exercise No. 5.

The second arrangement has the following distribution of voices: first voice to a double-note in fixed position and the second voice to a trill formed by a double-note and a single finger (Example 3.6).<sup>6</sup>



Example 3.6. Tanasescu, *Treatise*, Second subset. Polyphonic exercise No. 6.

- **Third Subset**

The third subset has only one variant. The fixed position is distributed to a three-note chord and the playing voice to the remaining two fingers as a trill (Example 3.7).<sup>7</sup>

<sup>6</sup> Ibid., 67.

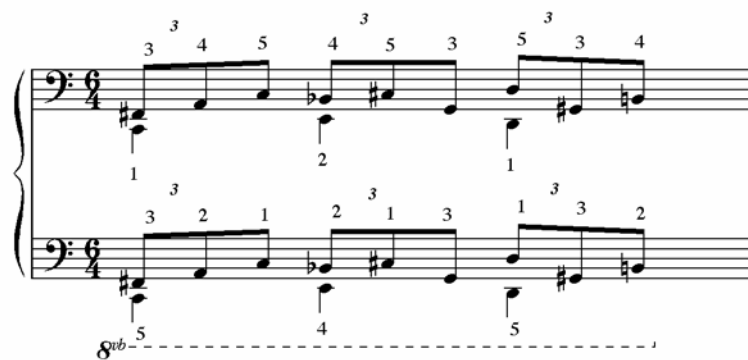
<sup>7</sup> Ibid., 96.



Example 3.7. Tanasescu, *Treatise*, Third subset. Polyphonic exercise No. 7.

- **Fourth Subset**

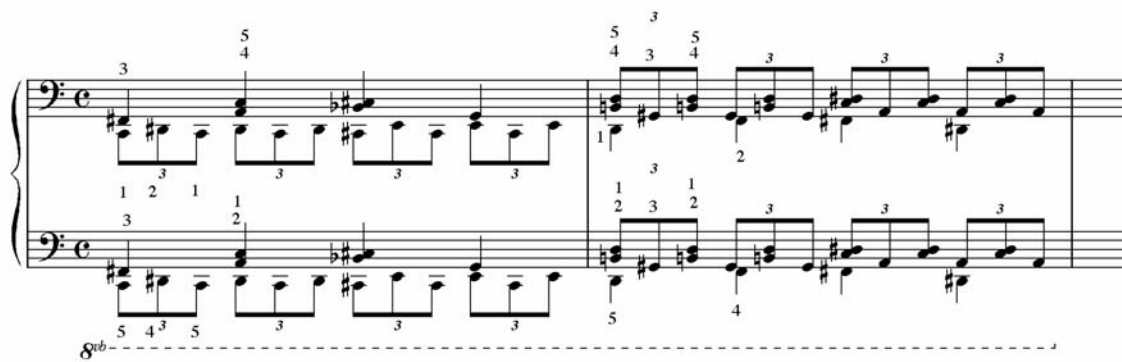
The fourth subset distributes the first voice to a trill of two fingers and the second voice to the remaining three fingers. The second voice distributed to the group of three fingers can perform either a melodic formula of three single fingers (Example 3.8),<sup>8</sup> or a group consisting of a double-note and a single finger (Example 3.9).<sup>9</sup>



Example 3.8. Tanasescu, *Treatise*, Fourth subset. Polyphonic exercise No. 8.

<sup>8</sup> Ibid.,108.

<sup>9</sup> Ibid.,149.



Example 3.9. Tanasescu, *Treatise*, Fourth subset. Polyphonic exercise No. 9.

If the second voice would play a chord, the third alternative, the pattern would coincide with the polyphonic exercise presented already in subset three (Example 3.10).



Example 3.10. Tanasescu, *Treatise*, Third subset. Polyphonic exercise No. 7.

Some of these exercises are presented in Liszt's *Technical Exercises*, Pischna's *Technical Studies*, and Dohnanyi's *Essential Finger Exercises*, but none of them presents all the possible fingering arrangements.

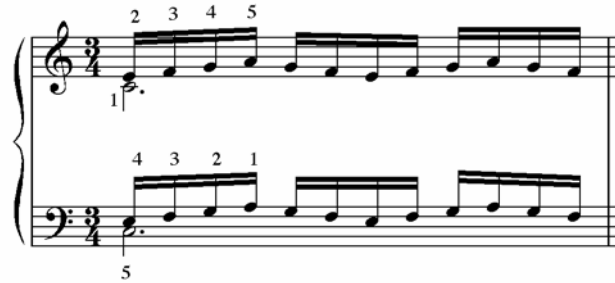
- **First Subset**

This group of polyphonic patterns distributes the fixed-position voice to one single finger. The role of the fixed position will be filled by each finger from 1 to 5. Subsequently, each exercise has five sections according to each fixed position played by a different finger.

### **First Polyphonic Pattern**

The first polyphonic pattern has the fixed position played by one finger while the playing voice is distributed to the remaining four fingers. It is one of the most often practiced polyphonic patterns in previous fingering systems. However, none of the previous approaches completely covers the whole fingering scheme. Liszt, for example, in his first volume uses only two fixed positions on finger 5 and finger 1 (Example 3.11-12).<sup>10</sup>





Example 3.12. Liszt, *Technical Exercises*, exercise 16, m. 1.

Compared to Liszt, Pischna also presents these two polyphonic patterns on finger 1 and 5, but with a few more variants (Example 3.13a-c).<sup>11</sup>



Example 3.13a. Pischna, *Technical Studies* exercise 13, m.1.



Example 3.13b. Pischna, *Technical Studies* exercise 14, m.1.



Example 3.13c. Pischna, *Technical Exercises*, exercise 1b, m.1.

Compared to earlier exercises, Tanasescu's approach has a wider range of polyrhythmic patterns between voices for enhancing finger independence. There are five

<sup>11</sup>Josef Pischna, *Technical Studies for the Pianoforte*, (New York: G. Schirmer, 1904), 2, 24, 26.

polyrhythmic patterns between the voices: a synchronized presentation of voices (Example 3.14), two against three (Example 3.15), three against four (Example 3.16), four against seven (Example 3.17), and an included polyrhythm (Example 3.18).<sup>12</sup>



Example 3.14. Tanasescu, *Treatise*, exercise 1, synchronized voices variant.



Example 3.15. Tanasescu, *Treatise*, exercise 1, polyrhythmic variant two against three.



Example 3.16. Tanasescu, *Treatise*, exercise 1, polyrhythmic variant three against four.

<sup>12</sup> Dragos Tanasescu, *Treatise of Pianistic Technique*, (Bucharest: Ciprian Porumbescu Conservatory, 1985), 3-7.



Example 3.17. Tanasescu, *Treatise*, exercise 1, polyrhythmic variant four against seven.



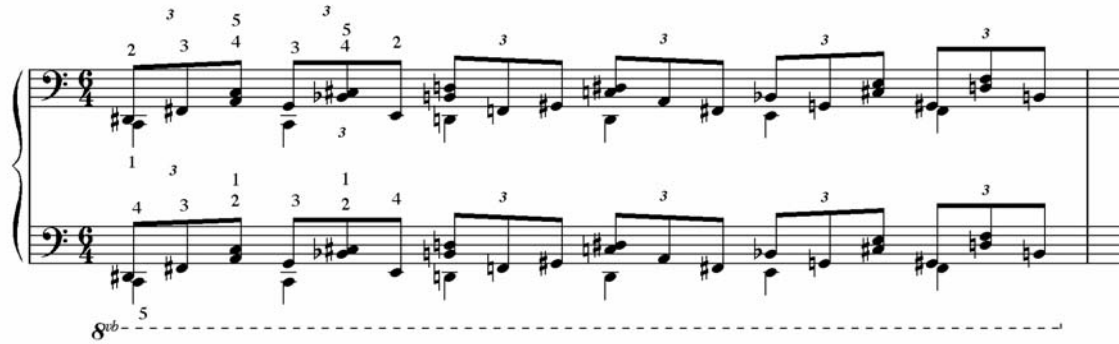
Example 3.18. Tanasescu, *Treatise*, exercise 1, “included polyrhythm” variant.

This last variation (Example 3.18) is titled by Tanasescu “included polyrhythm” because it includes three rhythmic layers. The four-note pattern is divided in triplets, and rhythmically it finishes and starts in a different place than the four-note formula pattern. The fixed position voice is playing in sixteenth-note rhythm which realizes, with the triplets above, a two against three rhythmic pattern.

## Second Polyphonic Pattern

This polyphonic pattern exhibits a different arrangement of the playing voice. This voice is arranged into a double-note and two single fingers and will have six possible arrangements for each fixed position. For example, for a fixed position distributed to finger 5, the playing voice will have the following arrangements: a) 1-2-3-4,

b) 1-3-24, c) 1-4-23, d) 2-3-14, e) 2-4-13, f) 3-4-12. Similar to the first polyphonic exercise, the fixed-position voice is distributed to each finger (Example 3.19).<sup>13</sup>



Example 3.19. Tanasescu, *Treatise*, exercise 2.

Each group will perform a math permutation formula of three in order to develop all possible connections among the fingerings (Table 3.1).

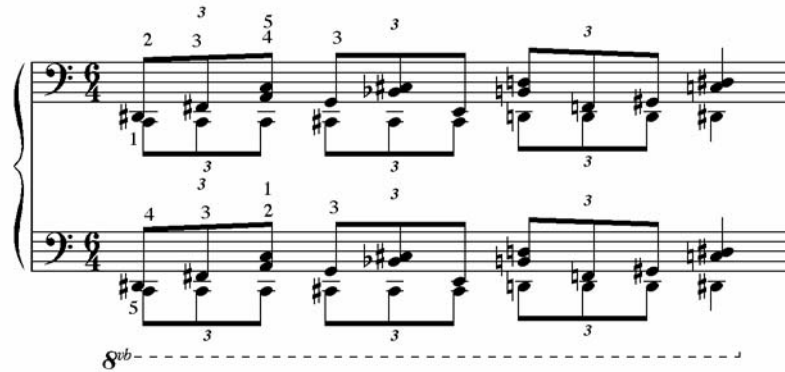
Table 3.1. Overall fingering scheme–Second polyphonic exercise.

First Voice – Five Fixed Positions Distributed to Each Finger					
	1	2	3	4	5
Playing Voice – the remaining four fingers playing groups of two single fingers and a double-note.	2-3-45	1-3-45	1-2-45	1-2-35	1-2-34
	2-4-35	1-4-35	1-4-25	1-3-25	1-3-24
	2-5-34	1-5-34	1-5-24	1-5-23	1-4-23
	3-4-25	3-4-15	2-4-15	2-3-15	2-3-14
	3-5-24	3-5-14	2-5-14	2-5-13	2-4-13
	4-5-23	4-5-13	4-5-12	3-5-12	3-4-12

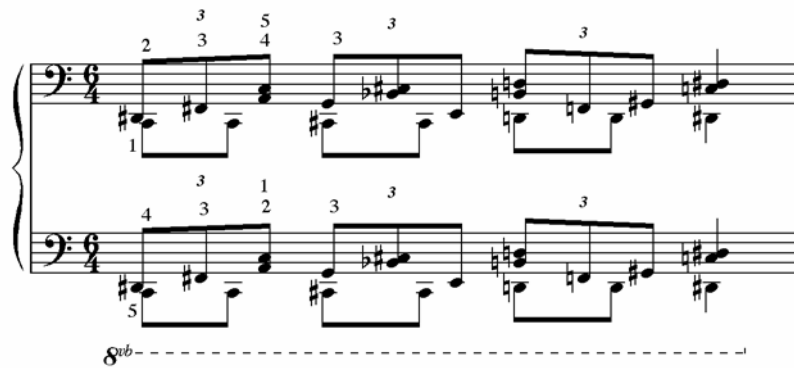
<sup>13</sup> Dragos Tanasescu, *Treatise of Pianistic Technique*, (Bucharest: Ciprian Porumbescu Conservatory, 1985), 9.



This exercise has six more polyrhythmic variations: synchronized voices (Example 3.20), two against three (Example 3.21), three against four (Example 3.22), three against five (Example 3.23), three against seven (Example 3.24), and similar to the first polyphonic exercise presented, an included polyrhythm variant (Example 3.25).<sup>14</sup>



Example 3.20. Tanasescu, *Treatise*, exercise 2, synchronized voices variant.

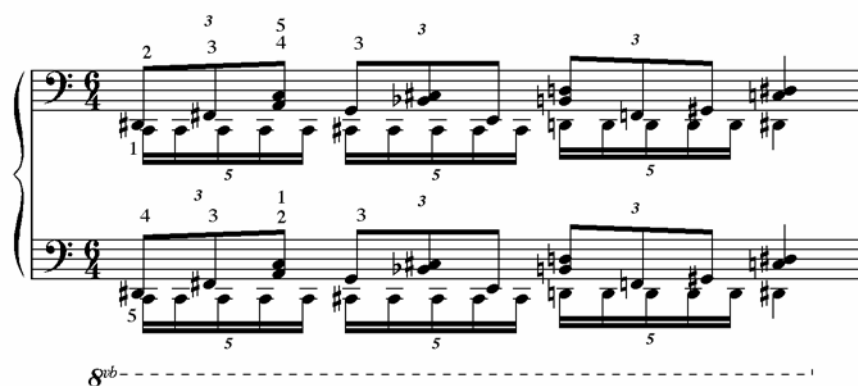


Example 3.21. Tanasescu, *Treatise*, exercise 2, polyrhythmic variant two against three.

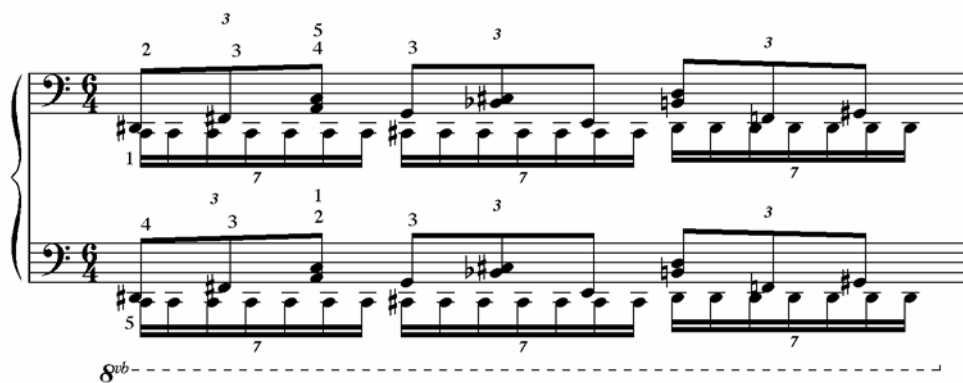
<sup>14</sup> Ibid., 9-19.



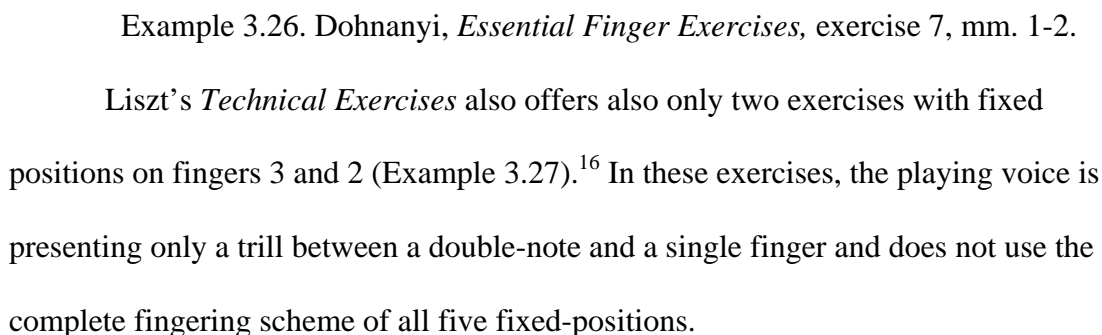
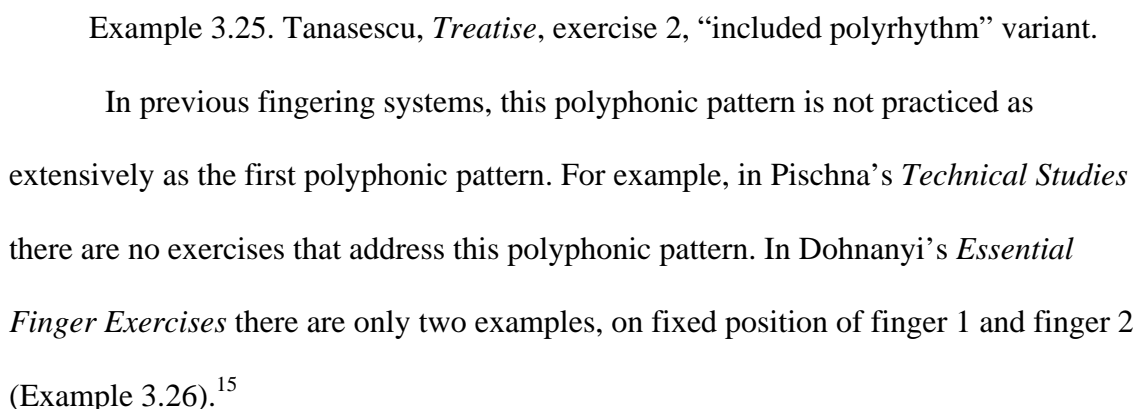
Example 3.22. Tanasescu, *Treatise*, exercise 2, polyrhythmic variant three against four.



Example 3.23. Tanasescu, *Treatise*, exercise 2, polyrhythmic variant three against five.



Example 3.24. Tanasescu, *Treatise*, exercise 2, polyrhythmic variant three against seven.



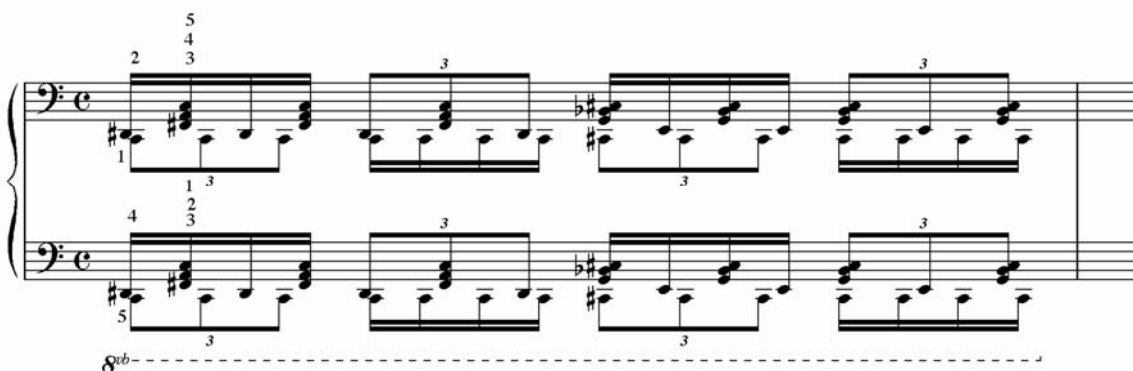
<sup>16</sup> Franz Liszt, *Technical Exercises for the Pianoforte*, (Port Washington: Alfred Music Co., Inc., 1971), 33.





Example 3.28. Tanasescu, *Treatise*, exercise 3.

Due to the simpler structure of this polyphonic pattern, the polyrhythmic variations have been concentrated into a single exercise: three against four, three against seven, and four against seven. Example 3.29 illustrates only the three against four variant.<sup>18</sup>



Example 3.29. Tanasescu, *Treatise*, exercise 3, three against four variant.

There are five fixed-positions, one for each finger, and each fixed-position has four different trill fingering arrangements (Table 3.2).

<sup>18</sup> Ibid, 28.

Table 3.2. Overall fingering scheme – Third polyphonic exercise.

Fixed Position – Five Fixed Positions Distributed to Each Finger					
	1	2	3	4	5
Playing Voice – the remaining four fingers playing trills - single fingers and three-note chords	2-345	1-345	1-245	1-235	1-234
	3-245	3-145	2-145	2-135	2-134
	4-235	4-135	4-125	3-125	3-124
	5-234	5-134	5-124	5-123	4-123

This polyphonic pattern, because of its less complex structure, is more often used in previous fingering systems. The pattern is presented in Dohnanyi's *Essential Finger Exercises* (Example 3.30).<sup>19</sup>



Example 3.30. Dohnanyi, *Essential Finger Exercises*, exercise 11, mm 1-2.

Compared to Tanasescu's exercise, Dohnanyi's polyphonic exercise is practiced in only one octave range, does not offer any rhythmical complexity between voices, and uses large values for the fixed positions.

<sup>19</sup> Ernő Dohnanyi, *Essential Finger Exercises for Obtaining a Sure Piano Technique*, (Budapest: Boosey & Hawkes, 1950), 14.

#### Fourth Polyphonic Pattern

The last polyphonic pattern in this subset distributes the fixed position voice to one finger and the playing voice to a trill of two double-notes. There are five polyrhythmic variations between voices: synchronized voices, two against three, three against four, three against five, and four against seven. In Example 3.31 only three polyrhythmic variations between voices are illustrated: synchronized voices, three against five, and four against seven.<sup>20</sup>



Example 3.31. Tanasescu, *Treatise*, exercise 4, synchronized voices, three against five and four against seven variants.

<sup>20</sup> Dragos Tanasescu, *Treatise of Pianistic Technique*, (Bucharest: Ciprian Porumbescu Conservatory, 1985), 38.

Table 3.3. Overall fingering scheme – Fourth polyphonic exercise.

<b>Fixed Position– Five Fixed Positions Distributed to Each Finger</b>					
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Playing Voice – the remaining four fingers playing double-note trills	23-45	13-45	12-45	12-35	23-45
	24-35	14-35	14-25	13-25	24-35
	25-34	15-34	15-24	15-23	25-34

These four polyphonic patterns exhaustively cover all fingering possibilities required by the polyphonic distribution of a fixed position to a single finger and the playing voice distributed to the remaining four fingers.

- **Second Subset**

The principal characteristic of this second subset of polyphonic patterns is that the fixed position is distributed to a double-note and the playing voice is distributed to the remaining three fingers. In this subset, due to the fixed position played by a double-note, there are ten fixed positions and two different possible arrangements in the playing voice: one that has a group of three single fingers and one that has a group of a double-note and a single finger.

### **Fifth Polyphonic Patterns**

This polyphonic pattern has the fixed position distributed to a double-note and the playing voice distributed to the other three fingers as a melodic figure. The exposition of



3.32).<sup>21</sup>

synchronized voices variant.

permutation formula is applied to produce all possible finger arrangements (Table 3.4).

Table 3.4. Overall fingering scheme – Fifth polyphonic exercise.

### Fixed Positions – Ten Fixed Position Distributed to Each Double-Note

with double-note fixed positions played by fingers 12 and 15 (Example 3.33).<sup>22</sup>

<sup>21</sup> Dragos Tanasescu, *Treatise of Pianistic Technique*, (Bucharest: Ciprian Porumbescu Conservatory, 1985), 48-49.

<sup>22</sup>Josef Pischna, *Technical Studies for the Pianoforte*, (New York: G. Schirmer, 1904), 14.



Example 3.33. Pischna, *Technical Etudes*, exercise 7, mm. 1-2.

In Dohnanyi's method there is one exercise that approaches this polyphonic pattern; it has only a fixed position played by fingers 12 (Example 3.34).<sup>23</sup>

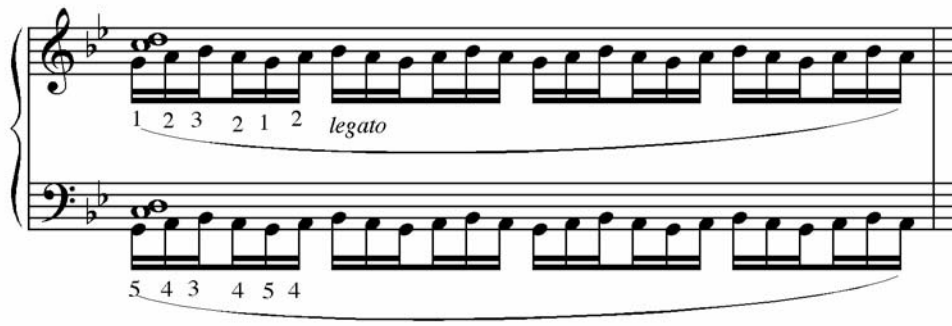


Example 3.34. Dohnanyi, *Essential Finger Exercises*, exercise 1, m. 9.

In Liszt's *Technical Exercises*, only two double-note fixed positions are presented with fingers 12 and 45. The playing voice presents four of the six possible arrangements of three-finger group. The playing voice also uses a large variety of rhythms and articulations (Example 3.35).<sup>24</sup>

<sup>23</sup> Ernő Dohnanyi, *Essential Finger Exercises for Obtaining a Sure Piano Technique*, (Budapest: Boosey & Hawkes, 1950), 7.

<sup>24</sup> Franz Liszt, *Technical Exercises for the Pianoforte*, (Port Washington: Alfred Music Co., Inc., 1971), 11.



Example 3.35. Liszt, *Technical Exercises*, exercise 7, m. 3.

Liszt uses in the next variations of this exercise, different types of touch: legato, legato-staccato, two by two articulation, and dotted rhythms (Example 3.36).<sup>25</sup>



Example 3.36. Liszt, *Technical Exercises*, exercise 7, mm. 4-9.

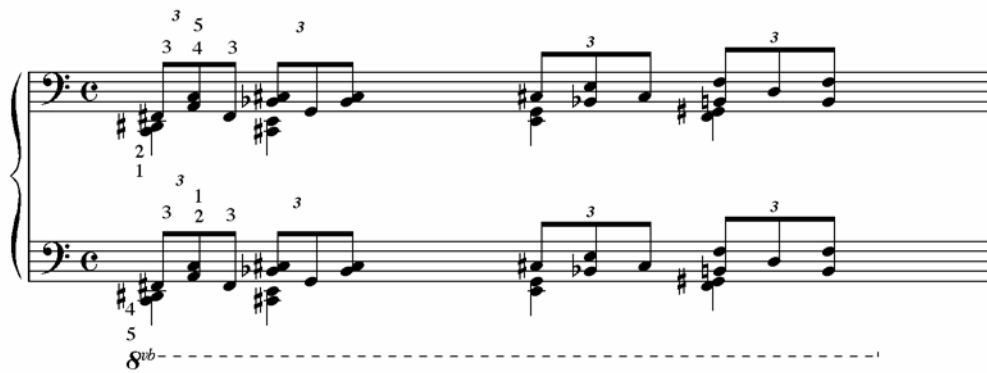
Numerous composers (Cramer, Clementi, Czerny, etc.) have addressed in their etudes different types of touch. However, very few have tried to enrich the same fingering pattern with various types of touch, rhythms and accents like Liszt does in his *Technical Exercises*.

<sup>25</sup> Ibid., 11.

The emphasis and goal of practicing the same pattern with multiple types of touch are not merely to practice the different approaches to the key, but to expand the adaptability of a certain technical pattern through different types of touch.

### Sixth Polyphonic Pattern

This polyphonic pattern has the fixed position distributed to a double-note and the playing voice distributed to a trill formed by a double-note and a single finger (Example 3.37).<sup>26</sup>



Example 3.37. Tanasescu, *Treatise*, exercise 6.

There are ten different fixed positions in the exercise, as many as different double-note fingerings. Each fixed position will practice three different trills-arrangements (Table 3.5).

<sup>26</sup> Dragos Tanasescu, *Treatise of Pianistic Technique*, (Bucharest: Ciprian Porumbescu Conservatory, 1985), 67.

Table 3.5. Overall fingering scheme – Sixth polyphonic exercise.

Fixed Positions – Ten Fixed Position Distributed to Each Double-Note										
	12	13	14	15	23	24	25	34	35	45
Playing Voice - the remaining three fingers playing trills	3-45	2-45	2-35	2-34	1-45	1-35	1-34	1-25	1-24	1-23
	4-35	4-25	3-25	3-24	4-15	3-15	3-14	2-15	2-14	2-13
	5-34	5-24	5-23	4-23	5-14	5-13	4-13	5-12	4-12	3-12

Tanasescu presents this polyphonic pattern in five polyrhythmic variations: two against three, three against four, three against five, three against seven, and four against seven.

Example 3.38. illustrates only two of them: three against five and three against four.<sup>27</sup>



Example 3.38. Tanasescu, *Treatise*, exercise 6, three against five and three against four variants.

This polyphonic pattern is not addressed in Pischna's or Dohnanyi's methods.

Liszt presents only one similar exercise in volume IX, exercise 76 (Example 3.39).<sup>28</sup> In

Liszt's exercise the fingering scheme is almost complete, and all ten double-notes are practiced as fixed positions.

<sup>27</sup> Ibid., 74-77.

<sup>28</sup> Franz Liszt, *Technical Exercises for the Pianoforte*, (Port Washington: Alfred Music Co., Inc., 1971), 172-174.

However, the playing voice is playing only one trill arrangement instead of three.



Example 3.39. Liszt, *Technical Exercises*, exercise 76, mm. 67-87.

Liszt's polyphonic pattern is organized by the playing voice. The playing voice presents first fingerings without gaps: 12-3, 23-4, 34-5. Then the fingerings that are skipping one finger: 12-4, 13-4, 23-5, 24-5; and at the end of the exercise are practiced the fingering skipping two fingers: 12-5, 13-5 and 14-5. This exercise represents one of the earliest and most organized examples of technical fingering patterns.

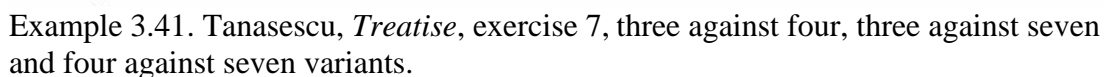
- **Third Subset**

### **Seventh Polyphonic Pattern**

In this subset there is only one polyphonic pattern. The fixed position is distributed to a three-note chord and the playing voice performs a trill with the remaining two fingers. The exposition of voices and their synchronized presentation are incorporated in one exercise (Example 3.40).<sup>29</sup>

<sup>29</sup> Dragos Tanasescu, *Treatise of Pianistic Technique*, (Bucharest: Ciprian Porumbescu Conservatory, 1985), 96.





This technical pattern is addressed only once in Pischna's *Technical Etudes*, in exercise 9 with the left hand fixed position distributed to the three-note chord 521 and playing voice executing a trill between 4 and 3 (Example 3.42).<sup>31</sup>



Pischna's polyphonic pattern is transposed and the trill is practiced to all whole steps within the range of one octave.

In Dohnanyi's method this polyphonic pattern also appears. In exercise 1 he presents it in three fixed-positions: 125, 123, 124. Similar to Pischna's exercise, Dohnanyi's exercise practices playing-voice trills with weak fingers such as 3-4, 4-5 and 3-5 (Example 3.43).<sup>32</sup>

<sup>32</sup> Ernő Dohnanyi, *Essential Finger Exercises for Obtaining a Sure Piano Technique*, (Budapest: Boosey & Hawkes, 1950), 7.





Example 3.43. Dohnanyi, *Essential Finger Exercises*, exercise 1, mm. 1-3.

In exercises 6, 10, and 18 of the first volume, Liszt addresses this polyphonic pattern with four fixed-positions: 345, 145, 125 and 123 (Example 3.44).<sup>33</sup>



Example 3.44. Liszt, *Technical Exercises*, exercises 6, 10, 18.

- **Fourth Subset**

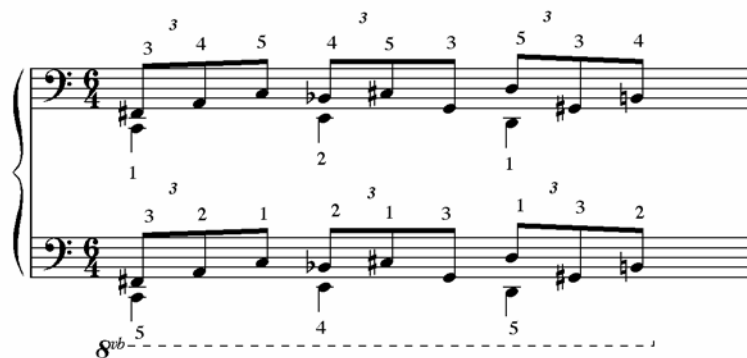
This subset consists of two polyphonic patterns, and neither of them have a fixed position as the first polyphonic patterns did. Because these two patterns do not have a fixed position and both voices perform a figure, they are more complex than the polyphonic patterns previously presented. Some of the most famous pages in Classic and Romantic piano repertoire use these polyphonic textures to articulate musical expression.

### **Eighth Polyphonic Pattern**

In this polyphonic pattern the first voice is distributed to a group of two fingers, as a trill, and the second voice to the remaining three fingers, as a melodic figure (Example 3.45).<sup>34</sup>

<sup>33</sup> Franz Liszt, *Technical Exercises for the Pianoforte*, (Port Washington: Alfred Music Co., Inc., 1971), 10, 14, 18.

<sup>34</sup> Dragos Tanasescu, *Treatise of Pianistic Technique*, (Bucharest: Ciprian Porumbescu Conservatory, 1985), 108.



Example 3.45. Tanasescu, *Treatise*, exercise 8.

A math permutation formula is applied to the second voice in order to produce all possible finger arrangements. This pattern is performed twice in order to allow the first voice to start each three-note group with both of its fingers (Table 3.7).

Table 3.7. Fingering scheme – Eighth polyphonic exercise – first pattern.

First Voice – Trill Played with Fingers 1 and 2												
	1		1		1		1		1		1	
		2		2		2		2		2		2
2 <sup>nd</sup> V.	3,4,5	4,5,3	5,3,4	3,4,5	4,5,3	5,3,4	5,4,3	4,3,5	3,5,4	5,4,3	4,3,5	3,5,4

The fingering scheme is organized in ten sections, one for each trill performed with two fingers. Each of these trills plays a melodic formula with the rest of three fingers (Table 3.8).

Table 3.8. Overall fingering scheme – Eighth polyphonic exercise.

First Voice – Trills										
	1-2	1-3	1-4	1-5	2-3	2-4	2-5	3-4	3-5	4-5
2 <sup>nd</sup> Voice	3,4,5	2,4,5	2,3,5	2,3,4	1,4,5	1,3,5	1,3,4	1,2,5	1,2,4	1,2,3

This polyphonic pattern has two expositions of the voices. The second variant, titled the accompanied trill, has the first voice performing a measured trill in triplets while the second voice plays a melodic figure. It is one of the most often used polyphonic patterns in piano literature (Example 3.46).<sup>35</sup>

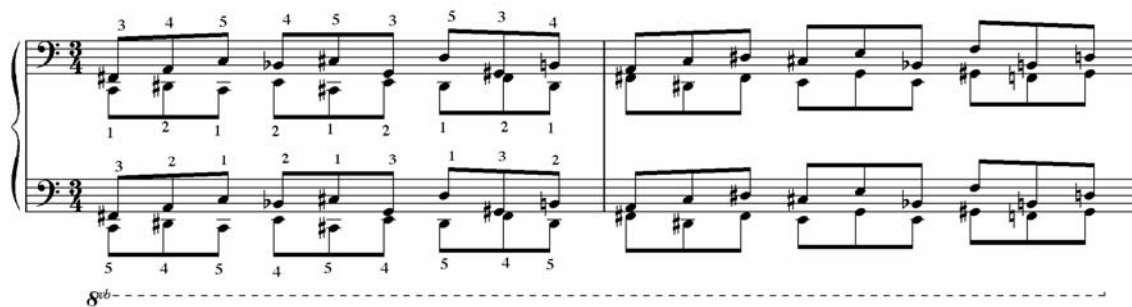


Example 3.46. Tanasescu, *Treatise*, exercise 8, accompanied trill variant.

The synchronized presentation of voices is a unique technical exercise. It may be interpreted both as a double-note exercise and as a polyphonic exercise. It resembles the synchronized presentation of voices in the second polyphonic exercise (Example 3.47).<sup>36</sup>

<sup>35</sup> Ibid., 113.

<sup>36</sup> Ibid., 122.



Example 3.47. Tanasescu, *Treatise*, exercise 8 synchronized voices variant.

This polyphonic pattern has five more polyrhythmic variations: two against three, (Example 3.48), three against five, three against four, three against seven (Example 3.49), and also included polyrhythm (Example 3.50).<sup>37</sup>

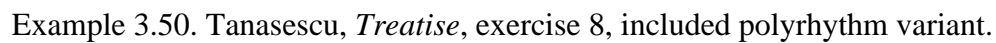


Example 3.48. Tanasescu, *Treatise*, exercise 8, two against three variant.



Example 3.49. Tanasescu, *Treatise*, exercise 8, three against seven variant.

<sup>37</sup> Ibid., 125-144.



This last polyphonic pattern has the first voice distributed to a trill of two fingers and the second voice playing a trill between a double-note and a single finger (Example 3.51).<sup>38</sup>



The entire pattern is organized, similar to the previous one, by the first voice trills. Each trill performed by the first voice has three different fingering arrangements played by the second voice (Table 9 -11).

70

Table 3.9. Fingering scheme – Ninth polyphonic exercise,  
first voice trill 1-2, second voice trill 3-45.

<b>First Voice – Single Finger Trills</b>								
	<b>1-2-1</b>	<b>2-1-2</b>	<b>1-2-1</b>	<b>2-1-2</b>				
					<b>1</b>	<b>2</b>	<b>2</b>	<b>1</b>
Second Voice - Trills	3	45	45	3				
					3-45-3	45-3-45	3-45-3	45-3-45

Table 3.10. Fingering scheme – Ninth polyphonic exercise,  
first voice trill 1-2, second voice trill 4-35.

<b>First Voice – Single Finger Trills</b>								
	<b>1-2-1</b>	<b>2-1-2</b>	<b>1-2-1</b>	<b>2-1-2</b>				
					<b>1</b>	<b>2</b>	<b>2</b>	<b>1</b>
Second Voice - Trills	4	35	35	4				
					4-35-4	35-4-35	4-35-4	35-4-35

Table 3.11. Fingering scheme – Ninth polyphonic exercise,  
first voice trill 1-2, second voice trill 5-34.

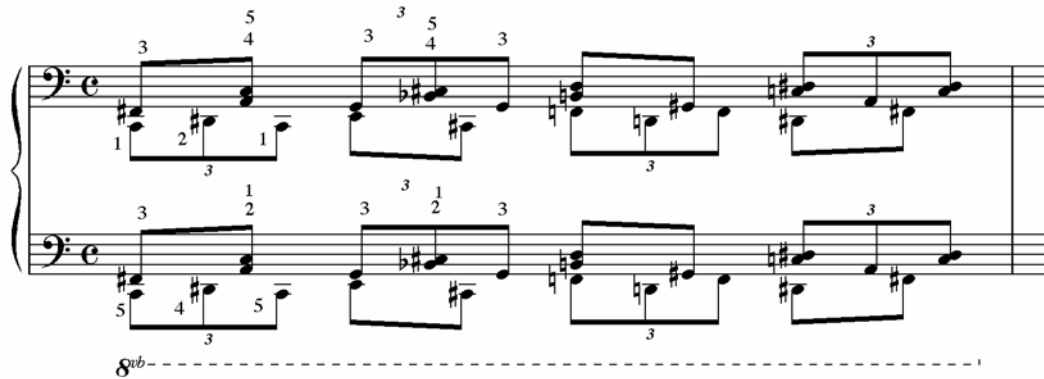
<b>First Voice -- Single Finger Trills</b>								
	<b>1-2-1</b>	<b>2-1-2</b>	<b>1-2-1</b>	<b>2-1-2</b>				
					<b>1</b>	<b>2</b>	<b>2</b>	<b>1</b>
Second Voice - Trills	5	34	34	5				
					5-34-5	34-5-34	5-34-5	34-5-34

The other nine fingering patterns performed by the first and second voice of this polyphonic exercise are illustrated in Table 3.12.

Table 3.12. Overall fingering scheme – Ninth polyphonic exercise.

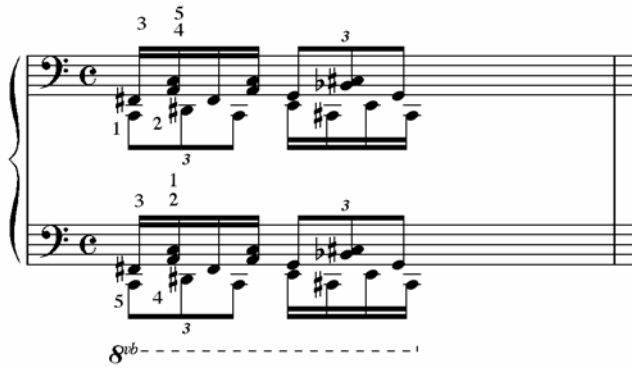
First Voice – Single Finger Trills									
	1-3	1-4	1-5	2-3	2-4	2-5	3-4	3-5	4-5
Second Voice- Trills	2-45	2-35	2-34	1-45	1-35	1-34	1-25	1-24	1-23
	4-25	3-25	3-24	4-15	3-15	3-14	2-15	2-14	2-13
	5-24	5-23	4-23	5-14	5-13	4-13	5-12	4-12	3-12

This polyphonic pattern has six more polyrhythmic variations: two against three, three against five, three against four, three against seven and four against seven, and also synchronized presentation of voices. Examples 3.52-54 illustrate only three variants: two against three, three against four and synchronized voices variants.<sup>39</sup>



Example 3.52. Tanasescu, *Treatise*, exercise 9, two against three variant.

<sup>39</sup> Dragos Tanasescu, *Treatise of Pianistic Technique*, (Bucharest: Ciprian Porumbescu Conservatory, 1985), 155-168.



Example 3.53. Tanasescu, *Treatise*  
Exercise 9, three against four  
variant.

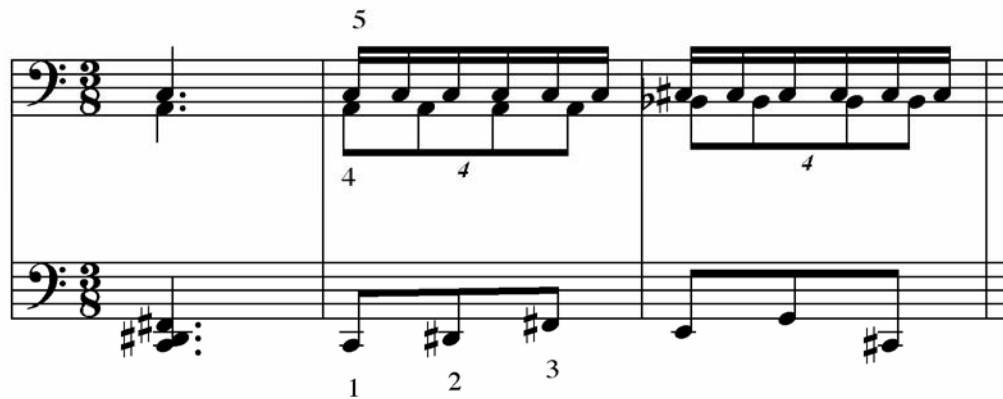


Example 3.54. Tanasescu, *Treatise*  
Exercise 9, synchronization of  
voices variant.



### Polyphonic Exercises with Three Voices

Tanasescu also presents in his *Treatise* polyphonic exercises with three, four and five voices. In order to give identity to a polyphonic pattern with three or more voices he uses only polyrhythmic patterns. One single example of three-voice exercise will be presented (Example 3.55).<sup>40</sup>



Example 3.55. Tanasescu, *Treatise*, polyphonic exercise with three voices, right hand.

The first voice is distributed to a group of three single fingers and the remaining two voices to the other two fingers. Each plays a different rhythmic formula. The second voice is playing groups of eighth-notes and the third voice is playing triplets. First voice, the group of three fingers, will perform a math permutation formula producing all six finger arrangements (Table 3.13).

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<sup>40</sup> Ibid., 192.

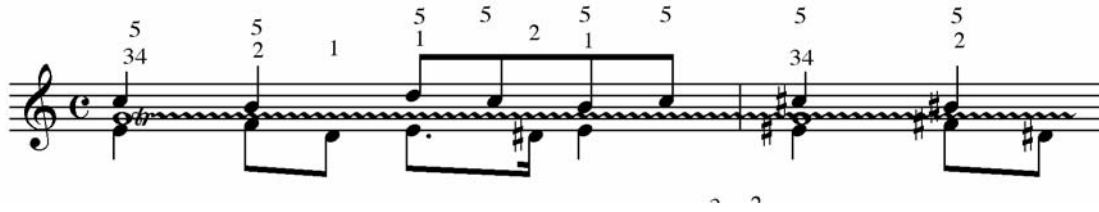
Table 3.13. Fingering scheme – polyphonic exercise with three voices – first pattern.

<b>Polyphonic Exercise with Three Voices</b>												
<b>First voice</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>2</b>	<b>3</b>	<b>1</b>	<b>3</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>2</b>	<b>1</b>
<b>Second voice</b>	4- 4	4- 4	4- 4	4- 4	4- 4	4- 4	4- 4	4- 4	4- 4	4- 4	4- 4	4- 4
<b>Third voice</b>	55 5	55 5	55 5	55 5	55 5	55 5	55 5	55 5	55 5	55 5	55 5	55 5

In this exercise, similar to the previous polyphonic exercises, attention is focused on two levels: the “playing voice” – first voice, and “the fixed position” – second and third voices. This exercise can be interpreted as a three against four rhythmical pattern between the first voice and the other two voices. The first voice, melodic figure with fingers 1,2, and 3, playing every other repeated note of soprano - finger 5, can make up an easier and more uniform rhythmical pattern.

The complete polyphonic pattern of this three-voice exercise inverts the rhythmic pattern between second and third voice. Finger 4 will have triplets and finger 5 will play groups of eighth-notes. Every section of the exercise has two variants; one for alto-soprano in polyrhythm of three against two, and one for alto-soprano two against three. The entire exercise will contain ten different patterns, one pattern for each group of three single fingers that perform the melodic figure. Tanasescu’s polyphonic exercises with three voices are not the first exercises that address such complex and difficult polyphonic textures. They have been preceded by Alfred Cortot’s polyphonic exercises. Cortot’s polyphonic exercises with three voices distribute a voice to a trill played with two

fingers; the remaining four fingers have a combination of a fixed position and a melodic figure (Example 3.56).<sup>41</sup>



Example 3.56. Cortot, *Rational Principles of Technique*, exercise 5a, chapter III, series C.

These three-voice polyphonic patterns develop better finger independence and finger control, increase the adaptability of finger patterns to a wider range of key patterns, and stimulate focused attention. Furthermore, all these technical patterns are presented and practiced with an interrelation with other musical skills (transposition, improvisation), that usually are less involved in technical training.

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<sup>41</sup> Alfred Cortot, *Rational Principles of Pianoforte Technique*, trans. R. Le Roy-Métaxas (Boston: Oliver Ditson Co., 1930), 57.

## CHAPTER FOUR

### TRANSPPOSITION AND FINGERING MAPPING IN TANASESCU'S *TREATISE*

Musical transposition is achieved by rewriting a musical fragment or a composition at a different pitch than it was originally composed. All the notes in the transposed composition will be raised or lowered by the same interval. Pianists generally practice transposition to improve both musical and technical skills. Transposition, improvisation, and sight-reading represent the creative side of piano technical training. It is important that these creative skills be combined with routine daily practice and technical exercises.<sup>1</sup>

In previous fingering systems, the importance of mixing finger exercises with more creative methods of practice, such as transposition and improvisation, is well understood. The ability to transpose a piece in any tonality is considered essential by many pianists and pedagogues. Hans von Bulow, for example, asserts the following in the preface of his Cramer's edition:

A modern virtuoso of the genuine caliber must be able to perform Beethoven's Op. 57, for example, as conveniently in F# minor as in F minor.<sup>2</sup>

In almost all previous fingering systems, transposition is recommended for technical and musical purposes. However, the rules for fingering that have to be respected in transposition are different from one method to another.<sup>3</sup> Czerny, for instance, advises his students to transpose his exercises. He does not recommend the use of the

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<sup>1</sup> Martin Gellrich, "Piano Technique and Fingering in the Eighteenth and Nineteenth Centuries: Bringing a Forgotten Method Back to Life," *British Journal of Music Education* 15 (1998): 5.

<sup>2</sup> Jean Baptiste Cramer, *Fifty Selected Piano-Studies*, edited by Hans von Bülow (New York: G. Schirmer, Inc., 1927), ii.

<sup>3</sup> Martin Gellrich, "Instrumental Practice in the Eighteenth and Nineteenth Centuries," *Bulletin of the Council for Research in Music Education* 119 (1993): 137.

original fingerings in transpositions. Czerny prescribes clear fingering rules and suggests sometimes more than one fingering for certain passages, when the solutions are ergonomically equal. However, he does not emphasize the rule of regularity. The rule of regularity prescribes the original fingering of the exercise in all transpositions.

Toward the end of the nineteenth century and beginning of the twentieth century, pedagogues like Kullak,<sup>4</sup> Liszt,<sup>5</sup> Dohnanyi<sup>6</sup> emphasized the importance of applying the rule of regularity in transposition. They recommended in their methods that in transposition the original fingering should be respected. In piano technique the rule of regularity emphasizes the adaptability of a fingering pattern. Practicing transposition in every white/black key-pattern enhances the fingerings with more applicability to a wider range of key patterns. The use of the rule of regularity in transposition, as a technical principle, represents one of the main characteristics of Pischhna's, Listzt's, and Dohnanyi's methods.

Tanasescu recommends his exercises to be transposed to all tonalities. He also considers other white/black key-patterns, such as certain sequences of intervals or different seventh chords and harmonic combinations for each hand, as possible alternatives. Tanasescu also introduces a new type of transposition that implies a new arrangement of the whole finger pattern.

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<sup>4</sup> Adolph Kullak, *The Aesthetics of Pianoforte Playing*, (New York: G. Schirmer, 1893), 122.

<sup>5</sup> Franz Liszt, *Technical Exercises for the Pianoforte*, (Port Washington: Alfred Music Co., Inc., 1971), 119, 155.

<sup>6</sup> Ernő Dohnanyi, *Essential Finger Exercises for Obtaining a Sure Piano Technique*, (Budapest: Boosey & Hawkes, 1950), 9.

## **Transposition of Finger Patterns in Parallel and Contrary Motion**

Tanasescu uses not only the white/black key-patterns to realize transposition, but also he arranges in different ways the series of fingering inside the entire technical pattern. This operation resembles mapping pitch-class sets and twelve-tone series inside the circle of twelve pitches. The order of fingering patterns, as it appears in Tanasescu's exercises, is similar to the prime-form of a set class. Mapping the fingering inside of the whole technical pattern would be similar to finding the rest of the class members of that prime form.

There are three types of symmetry inside a technical pattern: the axis of symmetry that is formed within the complete technical pattern played by one hand, the symmetry that results by playing in parallel with both hands a complete technical pattern, and the axis of symmetry that results between hands that perform a complete technical pattern in contrary motion.<sup>7</sup> The advantages of this new method of transposition are that the new variants are consciously practiced, and the whole process of mapping fingerings offers far more possibilities than tonal white/black key patterns.

The symmetry of mapping fingerings inside a fingering pattern is a consequence of their order. For example, in a three-note chord pattern exercise, the series of fingering-123, 124, 125, 134, 145, 234, 235, 345 -- has the following structure; the first three-note chords are formed by the same double-note and the other three fingers taken successively. It follows the double-note 13 played with finger 4 and then with finger 5, and so on (Table 4.1).

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<sup>7</sup> Parallel and contrary motion does not refer to motion on the keyboard but to the direction the fingerings are read; it is similar to reading the rows in a twelve-tone matrix.

Table 4.1. The structure of three-note chord series of fingerings for the right hand

<b>Double- notes</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>23</b>	<b>24</b>	<b>34</b>
Single fingers	3	4	5	4	5	5
	4	5		5		
	5					

This order has been used by Kullak in his method to organize the fingering in patterns. The entire scheme starts with finger 1, and as a result, the first six consecutive chords start with finger 1: 123, 124, 125, 134, 135, and 145. The left hand has the same structure but in parallel, starting with finger 5. Therefore, the first six chords will start with 5: 543, 542, 541, 532, 531, and 521 (Table 4.2).

Table 4. 2. The structure of three-note chord series of fingerings for the left hand.

<b>Double- notes</b>	<b>54</b>	<b>53</b>	<b>52</b>	<b>43</b>	<b>42</b>	<b>32</b>
Single fingers	3	2	1	2	1	1
	2	1		1		
	1					

In this way, each chord fingering is paralleled according to the structure of the other hand (Example 4.1). Playing in contrary motion implies a reorganization of the whole pattern for both hands. This fingering mapping requires a performer to mentally reorganize the entire scheme again. This process may resemble transposing or inverting

twelve-tone rows in a matrix. When a twelve-tone series is transposed or inverted, the content remains the same, but in a different order.

Table 4.3. Fingering of three-note chords: 123-124-125,  
parallel motion – ascending

Right Hand	123-124-125	124-125-123	125-123-124
Left Hand	543-542-541	542-541-543	541-543-542



Example 4.1. Exercise with three-note chords in parallel motion – ascending

Tanasescu’s process of mapping fingerings in his exercise employs the same basic procedure of transposition -- reinforcement of known information without the monotonous repetition. The right hand and left hand fingerings in Tanasescu’s exercises represent two different ways of “reading” the whole technical pattern of three-note chords. Practicing them in both parallel and contrary motion involves mapping the whole finger scheme from one hand to the other.

Table 4.4. Fingering of three-note chords 543-542-541, parallel motion - descending

Right Hand	543-542-541	542-541-543	541-543-542
Left Hand	123-124-125	124-125-123	125-123-124





Example 4.2. Exercise with three-note chords in parallel motion - descending

It can be noticed in Table 4.4 that the right hand is playing in parallel descending variant what the left hand played in the previous parallel variant (Example 4.2).

In the first contrary motion both hands are playing the fingering variant of the right hand, (Table 4.5) while in the second contrary motion variant both hands are using the left hand fingering (Table 4.6).

Table 4.5. Fingering of three-note chords 123-124-125, first contrary motion

Right Hand	123-124-125	124-125-123	125-123-124
Left Hand	123-124-125	124-125-123	125-123-124

Table 4.6. Fingering of three-note chords 543-542-541, second contrary motion

Right Hand	543-542-541	542-541-543	541-543-542
Left Hand	543-542-541	542-541-543	541-543-542

The central characteristic of Tanasescu's *Treatise* is the use of mathematical permutation formulas to arrange fingering patterns. In these fingering structures, the symmetry between the right hand and left hand finger patterns becomes more noticeable than in earlier exercises. All Tanasescu's exercises in both Book II and Book III are presented in parallel motion between the hands. The left hand starts with finger 5 and the

3 4 5 4 5  
2 2 2 3 3  
1 1 1 1 1

5 4 5 5 5  
1 2 2 2 3

5 5 5 5 5  
4 4 4 3 3  
3 2 1 2 1

5 4 4 4 3  
2 3 3 2 2  
1 2 1 1 1

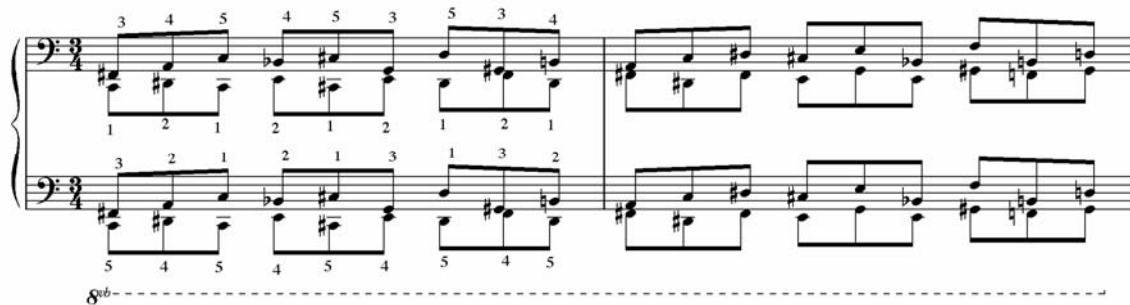
3 2 1 2 1  
4 4 3 3 5

1 1 1 1 1  
2 3 1 2 2  
5 4 4 4 3

1 1 1 1 1  
2 2 2 3 3  
3 4 5 4 5

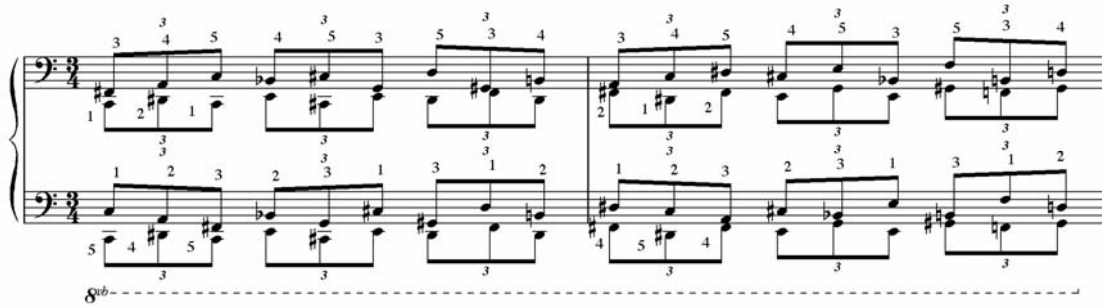
1 2 2 2 3  
4 3 3 4 4  
5 4 5 5 5

All these exercises as well as the polyphonic exercises presented in Chapter III of this monograph are to be practiced in both parallel and contrary variants of reading their fingerings. A very clear example of mapping fingerings is illustrated in polyphonic exercises. In these exercises a voice can play in contrary motion, while the fixed position remains in parallel motion. For example, the eight polyphonic pattern is practiced initially in parallel with both voices and both hands; the left hand starts with finger 5, and right hand with finger 1 (Example 4.4).<sup>8</sup>



<sup>8</sup> Dragos Tanasescu, *Treatise of Pianistic Technique*, (Bucharest: Ciprian Porumbescu Conservatory, 1985), 122.

It also can be practiced with first voice, both the hands playing parallel trills (fingers 5-4 for the left hand and 1-2 for the right hand), and the melodic figure in contrary motion (Example 4.1).



Example 4.5. Polyphonic exercise 8 with first voice playing a trill in parallel motion and the melodic figure in contrary motion.

Table 4.7. Polyphonic exercise with first voice in parallel and second voice in contrary motion – first pattern.

<b>Right Hand</b>												
1 <sup>st</sup> Voice	1		1		1		1		1		1	
		2		2		2		2		2		2
2 <sup>nd</sup> Voice	3	4	5	4	5	3	5	3	4	3	4	5
<b>Left Hand</b>												
1 <sup>st</sup> Voice	5		5		5		5		5		5	
		4		4		4		4		4		4
2 <sup>nd</sup> Voice	1	2	3	2	3	1	3	1	2	1	2	3

There is a similar example in Dohnanyi's *Essential Finger Exercises*, exercise 1.

Dohnanyi acknowledges this difficulty and addresses it in this technical exercise. Both hands are playing a double note fixed position of fingers 1 and 2, and the remaining three

fingers are playing a figure of single fingers. The group of three fingers does not continue to play in contrary motion, the direction implied by the fixed position, but in parallel motion (Example 4.6).<sup>9</sup>



Example 4.6. Dohnanyi, exercise 1. Fixed positions indicate a contrary motion, the melodic figure is playing in parallel.

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<sup>9</sup> Ernő Dohnanyi, *Essential Finger Exercises for Obtaining a Sure Piano Technique*, (Budapest: Boosey & Hawkes, 1950), 7.

## CHAPTER FIVE

### DRAGOS TANASESCU'S *TREASTISE OF PIANISTIC TECHNIQUE* AND ITS TECHNICAL APPLICATION IN THE REPRETOIRE

Dragos Tanasescu's *Treastise of Pianistic Technique* represents a logical continuation of the important fingering systems of the late nineteenth and early twentieth centuries: Kullak's *The Aesthetics of Pianoforte Playing*, Liszt's *Technical Exercises for Pianoforte*, Pischna's *Technical Studies*, and Dohnanyi's *Essential Finger Exercises*. All these fingering systems share the five important principles of Tanasescu's *Treastise*: the central importance of fingering patterns as the basic constituent of the technical pattern; thorough organization of technical material; the importance of reasoned technical practice; the use of transposition and improvisation to enhance concentration and awareness; and the importance of understanding the entire fingering scheme before practicing it.

The fingering systems of the late nineteenth and early twentieth centuries synthesize previous fingerings and etudes by Clementi, Cramer, Hummel, and Czerny. This synthesis of fingering patterns that Liszt, Pischna and Dohnanyi present in their exercises is very often overlooked because they lack any artistic quality such as melody, harmony, rhythm or form.<sup>1</sup> However, their relationship to early etudes and repertoire can be traced back to the beginning of the nineteenth century to the first etudes of Cramer, Clementi, and Hummel.

The first chapters of this paper analyze the fingering systems of Kullak, Pischna, Liszt, Dohnanyi, Tanasescu, and present the rationale for math permutations for polyphonic exercises in Tanasescu's *Treatise*. This chapter will present the relationship

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<sup>1</sup> Heinrich Neuhaus, *The Art of Piano Playing*, trans. K.A. Leibovitch (London: Kahn & Averill, 1993). 90.

and resemblance of Tanasescu's exercises to passagework from the repertoire. The primary focus will be on works with a polyphonic texture. Four different polyphonic patterns presented in Book III of *Treatise of Pianistic Technique* will be compared to pieces from the Classical and Romantic repertoire.

### First Polyphonic Pattern

Tanasescu's first polyphonic pattern, presented in Book III, has the fixed position played by one finger while the playing voice is distributed to the remaining four fingers. It is one of the most often practiced polyphonic patterns in previous fingering systems. It is also one of the most often used polyphonic patterns in the repertoire (Example 5.1).<sup>2</sup>



Example 5.1. Tanasescu, *Treatise*, Polyphonic exercise No. 1

This polyphonic pattern in many pieces is combined with other technical problems, such as extension and thumb-under positions. A very difficult example can be found in Chopin's *Etude* Op. 10, No. 4 (Example 5.2).<sup>3</sup>

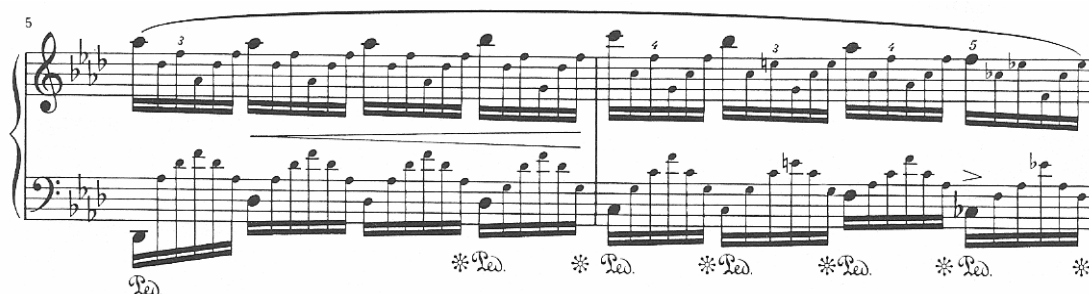
<sup>2</sup> Dragos Tanasescu, *Treatise of Pianistic Technique*, (Bucharest: Ciprian Porumbescu Conservatory, 1985), 2.

<sup>3</sup> Frederic Chopin, *Etuden*, (Munchen: G. Henle Verlag, 1983), 28.



Example 5.2. Chopin, *Etude* Op. 10, No. 4, mm. 31-32.

Even if the fixed position is not held down because of the fast tempo and use of the pedal for obtaining a continuous sonority, the technical difficulty is not easily manageable. A similar situation can be found in *Etude* Op. 25, No.1. In this case, finger 5 is differentiated from the rest of the four fingers, not by holding the key, but by the different quality of touch required by the melodic line. In this *Etude*, Chopin combines a polyphonic problem, with the technique of extension and variety of touch (Example 5.3).<sup>4</sup>

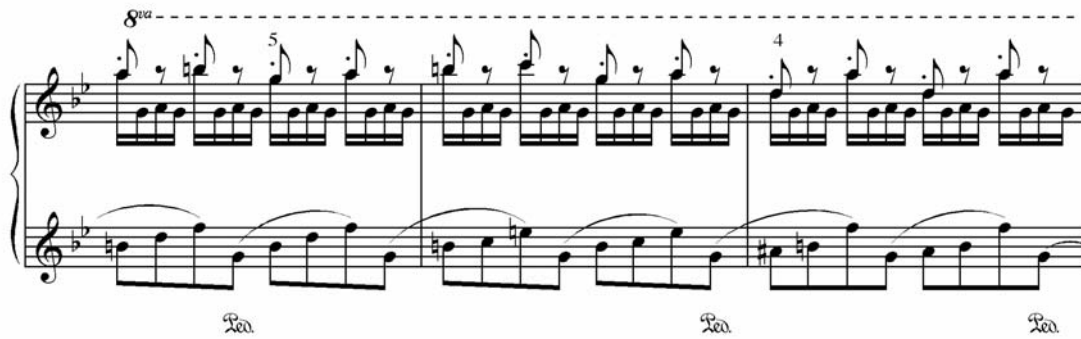


Example 5.3. Chopin, *Etude* Op. 25, No. 1, mm. 5-6.

A similar example can be found in the cadenza of the first movement of Tchaikovsky's Piano Concerto in B flat minor Op. 23, No. 1 (Example 5.4).<sup>5</sup>

<sup>4</sup> Ibid., 65.

<sup>5</sup> Peter I. Tschaikowsky, *Concerto for Piano in B flat Minor Op. 23, No. 1*, (New York: G. Schirmer, 1933), 47.



Example 5.4. Tchaikovsky, Piano Concerto, Op. 23, No. 1, cadenza of first movement.

In Chopin's Impromptu in A flat major Op. 29, this polyphonic pattern emphasizes the melodic lines and prepares the return of the first musical idea (Example 5.5).<sup>6</sup>



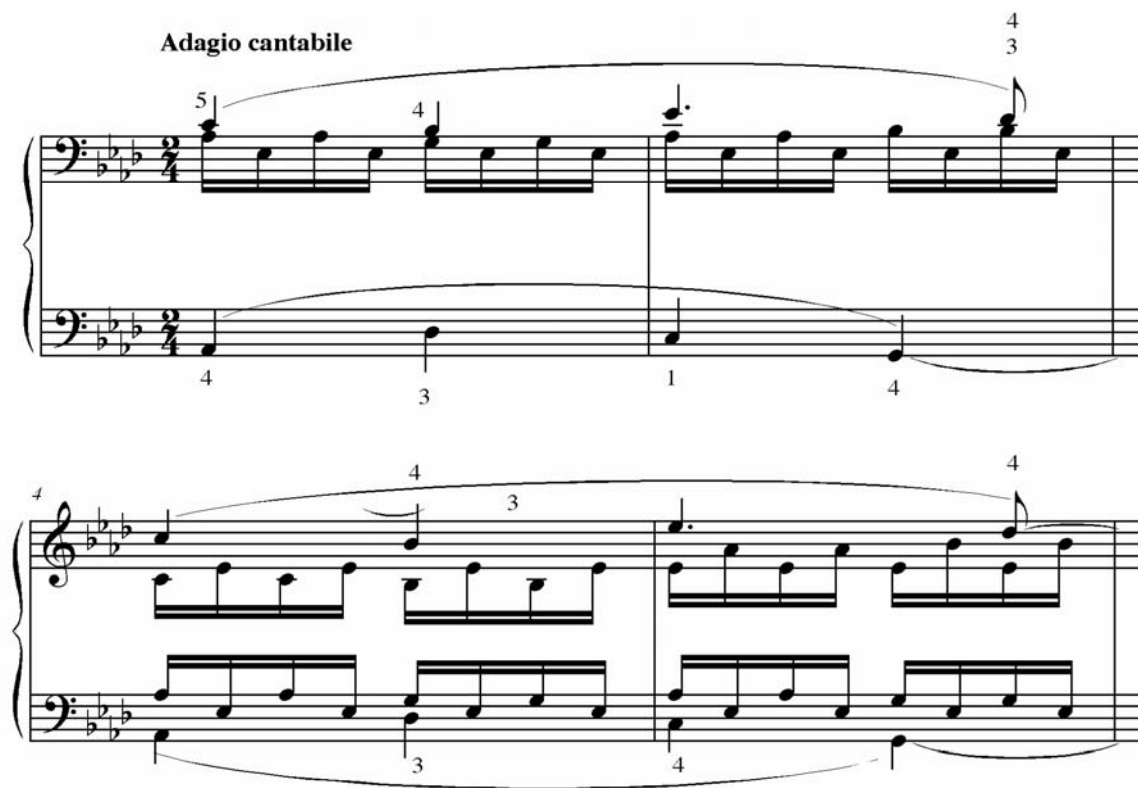
Example 5.5. Chopin, Impromptu Op. 29, mm. 16-17.

In Beethoven's piano sonatas, a huge list of examples of this polyphonic pattern can be found. Among the most famous examples is the second movement of the Piano Sonata in C minor, Op. 13, *Pathétique*. The first time the theme is presented, this pattern is used as a melody with its own accompaniment. The second time, the left hand doubles the accompaniment and emphasizes the bass line (Example 5.6).<sup>7</sup>

<sup>6</sup> Frederic Chopin, *Complete Balladas, Impromptus and Sonatas*, (New York: Dover Publications, Inc., 1988), 60.

<sup>7</sup> Ludwig van Beethoven, *Sonaten für Klavier zu Zwei Händen*, (Leipzig: Edition Peters, 1975), 152.





Example 5.6. Beethoven, Piano Sonata Op. 13, *Pathétique*, second movement, mm. 1-2, 9-10.

In Beethoven's Piano Sonata in G major Op. 31, No.1, third movement, in the opening theme this polyphonic pattern is used as well (Example 5.7).<sup>8</sup>



Example 5.7. Beethoven, Piano Sonata Op. 31, No. 1, third movement, mm. 1- 6.

<sup>8</sup> Ibid., 301.

Another famous example of this polyphonic texture can be found in Beethoven's Piano Sonata in B flat major Op. 106 (Example 5.8).<sup>9</sup>



Example 5.8. Beethoven, Piano Sonata Op. 106, third movement  
mm. 48-50.

In Beethoven's Piano Sonata in C minor, Op. 111, this pattern is used again. Beethoven employs this polyphonic pattern at the end of the movement, where the last appearance of the theme, accompanied by trills, is transformed into a delicate and ethereal texture (Example 5.9).<sup>10</sup>



Example 5.9. Beethoven, Piano Sonata Op. 111, second movement,  
last variation, mm. 71-72.

<sup>9</sup> Ibid., 534.

<sup>10</sup> Ibid., 614.

The musical score for 'The Rose Tree' is presented in two systems. The first system consists of a single staff with a treble clef, a key signature of one flat (B-flat), and a common time signature (C). The melody begins with a quarter rest, followed by a quarter note G4, an eighth note A4, and a quarter note Bb4. A slur covers the next six notes: G4 (quarter), A4 (quarter), Bb4 (quarter), G4 (quarter), A4 (quarter), and Bb4 (quarter). This is followed by a quarter rest, then a quarter note G4, an eighth note A4, and a quarter note Bb4. The second system also consists of a single staff with a treble clef, a key signature of one flat, and a common time signature. It begins with a quarter rest, followed by a quarter note G4, an eighth note A4, and a quarter note Bb4. A slur covers the next six notes: G4 (quarter), A4 (quarter), Bb4 (quarter), G4 (quarter), A4 (quarter), and Bb4 (quarter). This is followed by a quarter rest, then a quarter note G4, an eighth note A4, and a quarter note Bb4. The score includes dynamic markings such as *p* (piano) and *f* (forte), and articulation marks like slurs and accents. The lyrics 'The Rose Tree' are written below the staff.

## Second Polyphonic Pattern

The image shows a musical score for the song "The Rose Tree". It consists of two staves, both in 6/8 time. The key signature has one sharp (F#), indicating the key of D major. The melody is written on the upper staff, and the accompaniment is on the lower staff. The melody features a series of eighth-note triplets and sixteenth-note patterns. The accompaniment consists of a steady eighth-note bass line with chords. The score is labeled with the title "The Rose Tree" and the number "87b" at the bottom.

<sup>12</sup> Dragoș Tanasescu, *Treatise of Pianistic Technique*, (Bucharest: Ciprian Porumbescu Conservatory, 1985), 48.

This polyphonic pattern has the fixed position distributed to a double-note and the playing voice distributed to the other three fingers as a melodic figure. This polyphonic pattern is extensively used by Liszt in his works. The following example is from *Etudes d'Exécution Transcendante - Chasse-Neige* (Example 5.12).<sup>13</sup>



Example 5.12. Liszt, Transcendental Etude *Chasse-Neige*, mm. 25-26.

In this *Etude*, Liszt employs several polyphonic patterns to generate a large *crescendo*. The polyphonic pattern presented in Example 5.12 represents the first change of polyphonic texture and dynamic marking of the theme. The change in polyphonic texture coincides with the dynamic mark that indicates *f* for the first time in the piece. This polyphonic pattern will be used in the next phrase by the left hand in order to build the climax in bar 36. This polyphonic pattern is also used in *Transcendental Etude - Wilde Jagd*, middle section.

Chopin uses this polyphonic pattern in his *Etude* Op. 10, No. 6. Chopin employs this texture in the B section in the right hand, for expressive reasons. This polyphonic pattern is used to allow the left hand to double the bass and create a more dramatic tension. In the first and last sections of the etude the sixteenth-note figure is presented by the left hand, in an easier polyphonic pattern, while the right hand has the main singing voice. The polyphonic texture is combined here, in the B section, with very difficult

<sup>13</sup> Franz, Liszt, *Etudes d'Exécution Transcendante*, (Leipzig: Edition Peters, 1976), 105.

white/black key-positions. These difficult white/black key-positions are also combined with the thumb-under position in bar 32 (Example 5.13).<sup>14</sup>



Example 5.13. Chopin, *Etude* Op.10, No. 6, mm. 29-34.

This polyphonic pattern, combined with other polyphonic textures, is presented in *Etude* Op. 10, No 3 (Example 5.14).<sup>15</sup>



Example 5.14. Chopin, *Etude* Op. 10, No.3, mm. 1-4.

In *Etude* Op. 10, No. 2, Chopin's famous chromatic etude, the identity and difficulty of this technical pattern remains, even if the double note is not held down. The chromatic

<sup>14</sup> Frederic Chopin, *Etüden*, (München: G. Henle Verlag, 1983), 36.

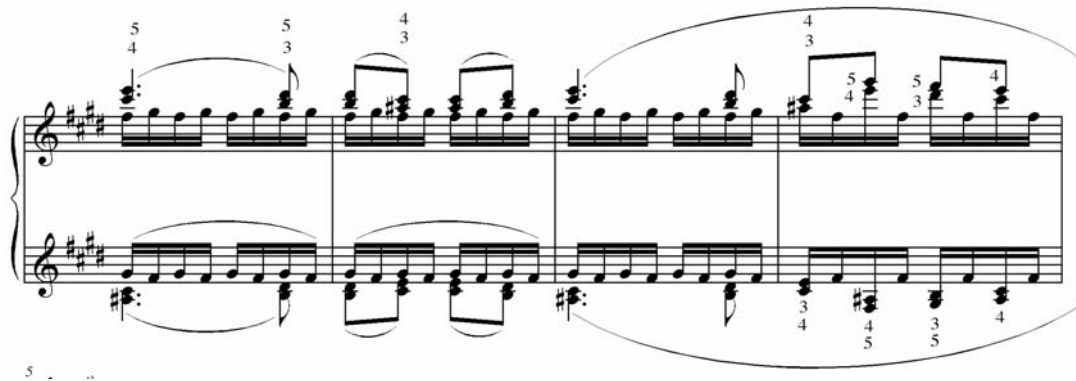
<sup>15</sup> Ibid, 22.

figure is used here with this baroque-type fingering, passing finger 3 over 4, a fingering often used by Chopin in his works (Example 5.15).<sup>16</sup>



Example 5.15. Chopin, *Etude* Op.10, No. 2, mm. 1-2.

This polyphonic pattern can also be found in Piano Sonata in E minor, Op. 90, second movement,<sup>17</sup> *Nicht zu geschwind und sehr singbar vorzutragen* by Beethoven (Example 5.16)



Example 5.16. Beethoven, Piano Sonata Op. 90, second movement, mm. 49-52.

This theme that is presented in section B of this movement is closely related to the main theme of the movement. It is based on the second half of the main theme, in the right hand, and on its inversion at the left hand. This polyphonic pattern is used to double

<sup>16</sup> Ibid, 18.

<sup>17</sup> Ludwig van Beethoven, *Sonaten für Klavier zu Zwei Händen*, (Leipzig: Edition Peters, 1975), 489.

the theme's melody and is played symmetrically by both hands. Beethoven also uses this polyphonic pattern in Sonata in E major, Op. 109 (Example 5.17).<sup>18</sup>



Example 5.17. Beethoven, Piano Sonata Op. 109, first movement, mm. 30-41.

Another well-known example of this technical pattern is in the second theme of Rachmaninoff's Piano Concerto in C minor Op. 18. The pattern is used to double the second theme's melody (Example 5.18).<sup>19</sup>

<sup>18</sup> Ibid., 562.

<sup>19</sup> Sergei Rachmaninoff, *Piano Concerto in C Minor Op. 18, No. 2*, (New York: Dover Publications, Inc., 1990), 52.



Example 5.18. Rachmaninoff, Piano Concerto Op. 18, first movement, mm. 87-90.

In the *Prelude* in B flat Minor, Op. 32, No. 2, Rachmaninoff consistently uses this polyphonic pattern throughout the piece (Example 5.19).<sup>20</sup>



Example 5.19. Rachmaninoff, *Prelude* Op. 32, No. 2, mm. 1- 4.

### Third Polyphonic Pattern

In this polyphonic pattern the first voice is distributed to a group of two fingers, as a trill, and the second voice played by the remaining three fingers, as a melodic figure. In

<sup>20</sup> Sergei Rachmaninoff, *Preludes and Etudes-Tableaux*, (New York: Dover Publications, Inc. 1988), 56.



Tanasescu's *Treatise* this polyphonic pattern is practiced in exercise eight (Example 5.20).<sup>21</sup>



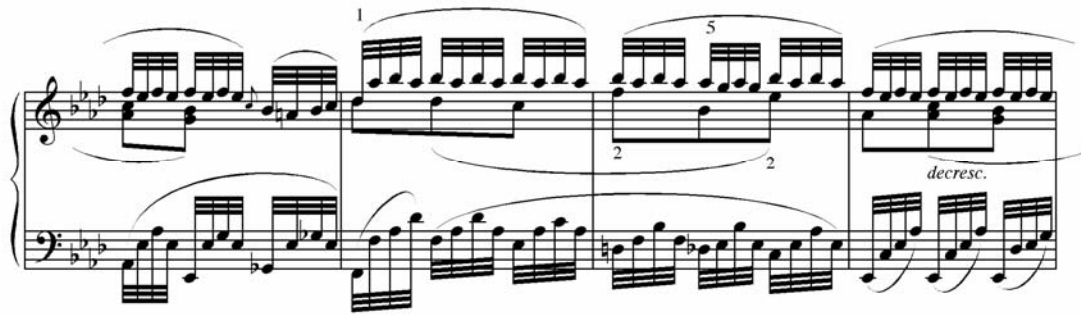
Example 5.20. Tanasescu, *Treatise*, Polyphonic exercise No. 8.

This polyphonic pattern is frequently used by Beethoven in his late sonatas such as the Piano Sonata in B flat Major, Op. 106, Piano Sonata in E. major, Op. 109, and Piano Sonata in C minor Op. 111. Beethoven also employs this technical device in the last movement of the earlier Piano Sonata in C Major Op. 53. In sonata in A flat major Op. 26, first movement, variation V, (Example 5.21)<sup>22</sup>, and in Piano Sonata in E flat Major, Op. 81a, in the third movement. In all these examples the trill of this polyphonic pattern is written out (Example 5.22).<sup>23</sup>

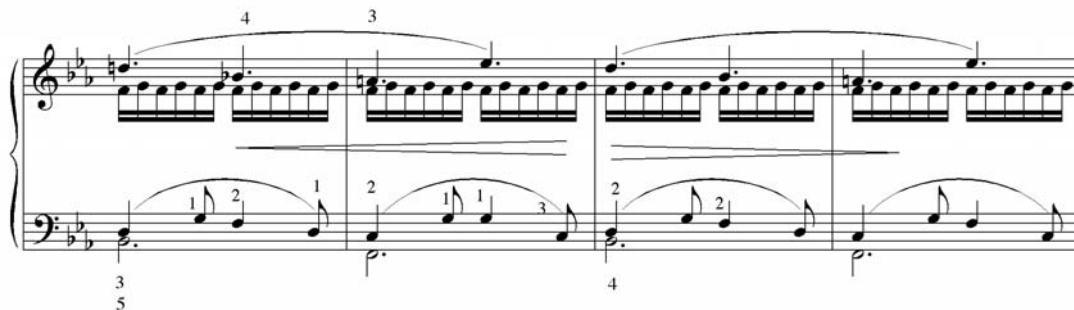
<sup>21</sup> Dragos Tanasescu, *Treatise of Pianistic Technique*, (Bucharest: Ciprian Porumbescu Conservatory, 1985), 113.

<sup>22</sup> Ludwig van Beethoven, *Sonaten für Klavier zu Zwei Händen*, (Leipzig: Edition Peters, 1975), 221.

<sup>23</sup> *Ibid.*, 476.



Example 5.21. Beethoven, Piano Sonata, Op. 26, first movement, variation V, mm. 30-33.



Example 5.22. Beethoven, Piano Sonata, Op. 81a *Les Adieux*, last movement, mm. 53-56.

This polyphonic pattern is the main technical figure that Liszt uses in his etude *Chasse-Neige*, to build up tension. A murmuring trill, or a tremolo, that accompanies a melody, (Example 5.23)<sup>24</sup> will become a chord-alternating figure between hands in *ff* (Example 5.24).

<sup>24</sup> Franz, Liszt, *Etudes d'Exécution Transcendante*, (Leipzig: Edition Peters, 1976), 110.



Example 5.23. Liszt, Transcendental Etude - *Chasse-Neige*, mm. 43-44.



Example 5.24. Liszt, Transcendental Etude - *Chasse-Neige*, m. 62.

This technical device is also present in Brahms's *Variations on a Theme by Paganini* Op. 35, (Example 5.25).

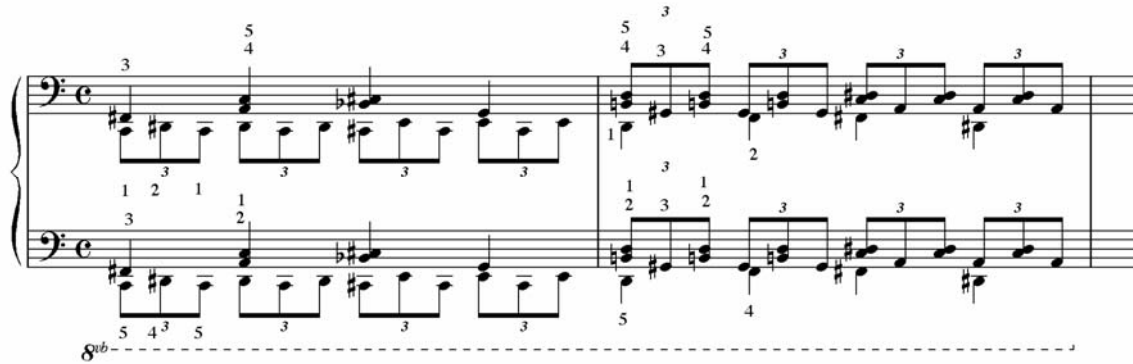


Example 5.25. Brahms, *Variations on a Theme by Paganini*, var. XIV, mm. 40-43.

The same pattern is used by Robert Schumann in his second *Etude de Concert* on *Paganini Caprices*, by Claude Debussy in the *Prelude* from *Pour le Piano*, and in the preludes *La Danse de Puck* and *Le Vent dans la Plaine*.

### Fourth Polyphonic Pattern

This last polyphonic pattern has the first voice playing a trill formed by a double-note and a single finger and the second voice playing a trill of two fingers (Example 5.26).<sup>25</sup>



Example 5.26. Tanasescu's polyphonic exercise No. 9

This polyphonic texture is not presented in previous fingering exercises, and it is not very often used in repertoire. One of the most famous examples of this polyphonic texture can be found in Rachmaninoff's Piano Concerto, in D minor, Op. 30, No. 3. Rachmaninoff composed this concerto in 1909 for his North American tour and it contains some of his most difficult polyphonic writing. One of the most brilliant examples is the passage that precedes the climax in the development section of first movement (Example 5.27).<sup>26</sup>

Rachmaninoff uses this polyphonic pattern in many other places in this concerto.

<sup>25</sup> Dragos Tanasescu, *Treatise of Pianistic Technique*, (Bucharest: Ciprian Porumbescu Conservatory, 1985), 149.

<sup>26</sup> Sergei Rachmaninoff, *Piano Concerto in D Minor Op. 30*, (New York: G. Schirmer, 1970), 18.



Example 5.27. Rachmaninoff, Piano Concerto, Op. 30, No. 3,  
first movement, mm. 204-213.

This paper has presented a very small part of the passagework from the repertoire that uses this group of four polyphonic patterns. The principal criteria in choosing these examples are consistency and clarity of the polyphonic pattern. However, the number of pieces that use small fragments of polyphonic patterns or combine them with other polyphonic textures is huge.

These polyphonic patterns are used to articulate the musical expression and orchestrate the voices. In all these masterworks, the polyphonic textures represent the fabric of music and musical thought. The technical exercises prepare and equip the pianist with the physical abilities to technically master these polyphonic textures.

## CONCLUSION

Four very important nineteenth century fingerings systems (Kullak's *The Aesthetics of Pianoforte Playing*, Liszt's *Technical Exercises for Pianoforte*, Pischna's *Technical Studies* and Dohnanyi's *Essential Finger Exercises*) find in Tanasescu's *Treatise of Pianistic Technique* a logical continuation. All of these methods have in common five important piano technique principles: the importance given to the fingering pattern, the importance given to conscious practice, thorough organization of technical material, the importance given to the combination of technical exercises with more creative methods such as transposition and improvisation, the importance given to the fingering scheme.

Tanasescu's *Treatise* improves upon earlier systems in all these aspects. Due to his math permutation formulas applied to the technical patterns, fingerings are practiced more consciously and the organization of technical material is exhaustive. Due to the new polyrhythmic patterns practiced between voices in polyphonic exercises and new transposition alternatives, his exercises enrich the skills and the adaptability of fingering patterns.

The *Treatise of Pianistic Technique* represents a mathematical approach to piano technique that may or may not be adopted by pianists. However, it cannot be overlooked because of the precision and completeness of its technical organization. The *Treatise* represents a valuable index of technical material that, due to its new approach and its completeness, deserves to be better known.

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## APPENDIX A

### A MATHEMATICAL EXPRESSION OF TANASESCU'S FINGERING ORGANIZATION IN THE THREE-NOTE CHORD EXERCISE

- Let  $X = \{1, 2, 3, 4, 5\}$  be the set of piano finger indicators for one hand.
- Let  $S$  be the symmetric group of degree five acting on  $X$ .
- $T = \{a, b, c\} \subset X$
- $|S| = 120$ , and  $|S_T| = 12$
- $|T^S| = 120/12 = 10$  (orbit length)

$X$  = The right hand fingering  
 $|S| = 5!$  Formula for all 5 finger  
 Arrangements = 120  
 $T$  = Any three fingers in  $X$   
 $|S|$  = Size of  $S$   
 $S_T$  = Stabilizer of  $T$  in  $S$   
 $T^S$  = orbit of all possible  
 three-note chords  
 included under the  
 action of  $S$

#### Finding an appropriate group

- $a, b \in S_T$ , such that  $a \neq b$
- Map  $a$  to a trichordal fingering in one hand, and  $b$  to a corresponding fingering in the other, but
- ten other members of  $S_T$  exist without representative fingering.
- We require an order 20 subgroup of  $S$  that acts transitively on the set  $X'$  of twenty trichordal fingerings, and
- In which the (setwise) stabilizers of any  $T$  are of order 2.

#### Frobenius group of order 20

- A transitive permutation group on a set  $X$  such that no member of  $G^\#$  fixes more than one point of  $X$  and some members of  $G^\#$  fixes at least one point of  $X$ .
- $G = \langle k, h \mid k^5 = h^4 = 1; kh = hk^2 \rangle$
- $|G| = 20$
- $|G_T| = 2$
- $k = (1, 2, 3, 4, 5); h = (1, 4, 3, 5)$

$k$  and  $h$  = generators of the  
 group  $G$   
 $h = k^{-1}$   
 $k, h$  = generators for  $X$

### Names for the members of $G$

- |                                  |                                |
|----------------------------------|--------------------------------|
| • $1 = (1)$                      | $f = k^4 h = (2, 4, 5, 3)$     |
| • $k = (1, 2, 3, 4, 5)$          | $g = k^2 h = (1, 5, 2, 3)$     |
| • $k^2 = (1, 3, 5, 2, 4)$        | $h = 1 h = (1, 4, 3, 5)$       |
| • $k^3 = (1, 4, 2, 5, 3)$        | $j = k^3 h = (1, 3, 4, 2)$     |
| • $k^4 = (1, 5, 4, 3, 2)$        | $m = kh = (1, 2, 5, 4)$        |
| • $f^2 = k^2 h^2 = (2, 5)(3, 4)$ | $f^3 = k^3 h^3 = (2, 3, 5, 4)$ |
| • $g^2 = kh^2 = (1, 2)(3, 5)$    | $g^3 = k^4 h^3 = (1, 3, 2, 5)$ |
| • $h^2 = 1h^2 = (1, 3)(4, 5)$    | $h^3 = 1h^3 = (1, 5, 3, 4)$    |
| • $j^2 = k^4 h^2 = (1, 4)(2, 3)$ | $j^3 = kh^3 = (1, 2, 4, 3)$    |
| • $m^2 = k^3 h^2 = (1, 5)(2, 4)$ | $m^3 = k^2 h^3 = (1, 4, 5, 2)$ |

### Action of $G$ on $T = \{1, 2, 3\}$

- |                          |                        |
|--------------------------|------------------------|
| • $1(T) = \{1, 2, 3\}$   | $f(T) = \{1, 2, 4\}$   |
| • $k(T) = \{2, 3, 4\}$   | $g(T) = \{1, 3, 5\}$   |
| • $k^2(T) = \{3, 4, 5\}$ | $h(T) = \{2, 4, 5\}$   |
| • $k^3(T) = \{1, 4, 5\}$ | $j(T) = \{1, 3, 4\}$   |
| • $k^4(T) = \{1, 2, 5\}$ | $m(T) = \{2, 3, 5\}$   |
| • $f^2(T) = \{1, 4, 5\}$ | $f^3(T) = \{1, 3, 5\}$ |
| • $g^2(T) = \{1, 2, 5\}$ | $g^3(T) = \{2, 3, 5\}$ |
| • $h^2(T) = \{1, 2, 3\}$ | $h^3(T) = \{2, 4, 5\}$ |
| • $j^2(T) = \{2, 3, 4\}$ | $j^3(T) = \{1, 2, 4\}$ |
| • $m^2(T) = \{3, 4, 5\}$ | $m^3(T) = \{1, 3, 4\}$ |

### Descriptions of the four cosets of $K$ ' action on $T$

- Let  $K(T)$  be right-hand non-gapped fingerings.
- Let  $Kh(T)$  be left-hand gapped fingerings.
- Let  $Kh^2(T)$  be left-hand non-gapped fingerings.
- Let  $Kh^3(T)$  be right-hand gapped fingerings.

This mathematical explanation of Tanasescu's fingering organization is provided by Dr.

Robert Peck – Associate Professor of Music Theory at Louisiana State University.

## APPENDIX B

### STATEMENT OF FAIR USE FOR TANASESCU *TREATISE* QUOTATIONS INCLUDED IN THIS MONOGRAPH

After a lengthy search among the important Romanian publishing companies and on the Internet, I was unable to contact Mr. Dragos Tanasescu and ask his permission to quote from his *Treatise of Pianistic Technique*. This statement of fair use is based upon the following factors:

- This monograph has a nonprofit educational purpose.
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- The number of quotations from Tanasescu's *Treatise of Pianistic Technique* is minimal, and they serve only to illustrate his new approach on piano technique.
- The effect of the use of these quotations does not impede upon the potential market value of Tanasescu's *Treatise*.

## APPENDIX C

### LETTER OF PERMISSION

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## **VITA**

Lucian Zidaru was born in Bucharest, Romania. He graduated from the Dinu Lipatti School of Music in Bucharest in 1983. In 1989 he graduated from G. Enescu Conservatory – Iasi. During his last years of college, he performed often in Iasi and Bucharest. He won also a series of prizes and awards as a piano performer and accompanist.

He started teaching piano and accompaniment at the Dinu Lipatti School of Music in 1990. After a few years, he started to collaborate with Romanian National Radio; in 1996 he was employed by RNR as a music editor. As a music editor at RNR, he had the chance to broadcast live some of the most exciting concerts and recitals that took place in Bucharest and in other important cities in Romania.

During these years he also played chamber music recitals and solo recitals in Bucharest, Iasi, Cluj-Napoca and Timisoara. In 1999 he started a Master of Music program in piano performance at Southeastern Louisiana University and graduated from S.L.U. in December 2000. In August 2001 he started a Doctor of Musical Arts program at Louisiana State University. He is married and has a 13 year-old son.