

Seymour Fink's *Mastering Piano Technique:*
Understanding Basic Technical Movements

By
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Abstract

For many pianists and students, piano technique is regarded as one of most important elements in their constant pursuit of artistic betterment. Since the Romantic era, numerous virtuosic works have been composed; in a similar vein, contemporary composers still entertain the idea of captivating the audience with physically demanding writing. In the meantime, the piano has been developed with heavier hammers and steel strings for a bigger sound and wider register compared to its prototype in the Baroque era. Difficult works coupled with heavier piano tend to create a hotbed of injury, as seen in Schumann, Rachmaninoff and currently Lang Lang. Even though there exists a handful of theories on piano technique advanced by the like of T. Matthay, O. Ortmann and A. Schultz, their theories can be difficult to understand, and even less applicable to piano works for the present day teachers and students.

In an email interview with Seymour Fink, he once said “When I taught at Yale in the early 80s none of the technique books readily available suited my needs as a teacher.”¹ Seymour Fink’s book *Mastering Piano Technique* contains many detailed diagrams and practical explanations. Moreover, a video recording is accompanied with the book to better clarify the contents of the entire book. I would like to introduce this book and apply the technical movements in it to a selection of etudes throughout this research. I hope this dissertation and my own videos (a YouTube link on Appendix) can provide some help for piano students and teachers.

¹ Seymour Fink, Personal conversation with Seonghyang Kim, March 2018.

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Table of Contents

Abstract	iii
Acknowledgements	iv
Table of Contents	v
List of Tables and Figures	vi
Introduction	1
Chapter 1	4
Chapter 2	13
Chapter 3	41
Conclusion	58
Bibliography	59
Appendix	61

List of Tables and Figures

Figure 1-1. The rotation cycle	14
Figure 1-2. The forearm push stroke	15
Figure 1-3. The forearm push stroke-washboard motion: the usable part of the trombone-slide diagonal with pronated arms	15
Figure 2-1. Arm Cycling	18
Figure 2-2. Pulling arm legato: Pronating Circle (top) and Supinating Circle (bottom)	19
Figure 2-3. Pushing Arm Stroke	21
Figure 2-4. Upper-arm gravity drop with low wrists position	22
Figure 2-5. Upper-arm gravity drop with high wrists position	22
Figure 2-6. Supinated finger stretches	24
Figure 2-7. Three primary hand positions, B. Palm position	25
Figure 2-8. Forward diagonal patch of the forearm stroke	26
Figure 2-9. Fingers in palm and correspondence position	27
Figure 2-10. Lateral motion-arm abduction: the basis for moving sideways at the keyboard	28
Figure 2-11. Forearm gravity drop-rebounding position	29
Figure 2-12. Rhythmic exercise routine for rebounding	29
Figure 2-13. Hand bounce	31
Figure 2-14. Vertical thumb stroke	32
Figure 2-15. Collapsed thumb midjoint	33
Figure 2-16. Thumb flexibility	34
Figure 2-17. Lateral thumb movement with arm rotation	35
Figure 2-18. Pulling fingers-the small muscle squeezing stroke	36

Figure 2-19. Pulling fingers-the finger snap stroke	37
Figure 2-20. Pulling fingers-the scratch touch stroke	37
Figure 2-21. The unprepared pulling finger stroke	38
Figure 2-22. Fifth-finger lateral strength	38
Figure 2-23. The unfolding finger stroke	39
Figure 2-24. Sidesaddle position of the right hand	40
Figure 2-25. Sidesaddle two-finger walking	40
Figure 3-1. Sidesaddle two-finger rocking	51
Figure 3-2. Preparation shifts	52
Figure 3-3. Lateral figure-eight exercise pattern	55
Figure 3-4. Doubly extending lateral exercise pattern	55
Figure 3-4. Walking rebounds	57
Example 3-1. A scale pattern of Czerny's Op. 740, No. 13, measures 1-3	45
Example 3-2. A penta-scale pattern of Glass's Etude No. 6, measures 126-127	45
Example 3-3. An arpeggio pattern (broken chord pattern), E. Rautavaara's Op. 42 no.1, measure 1	46
Example 3-4. A. Scriabin, Etude Op. 42 no.5, measures 20-23	47
Example 3-5. Rotation (top: staying thumb; bottom: moving thumb, Czerny's Op. 740 no.12, measures 1-2 and measures 35-37	48
Example 3-6. A. Scriabin, Etude Op. 42 no.5, measures 8-9	49
Example 3-7. Single-note repetition (top), Octave repetition (bottom left), Chord repetition (bottom right), P. Glass's Etude No. 6, measures 5-6 and measures 18-20.....	50
Example 3-8. Octave passage with thumb and 4-5 fingering, Chopin's Etude Op. 25 no.10, measures 1-3	51

Example 3-9. Chords with melody line in the inner voices, A. Scriabin's Etude Op. 2 no.1, measures 20-23	53
Example 3-10. Chord passages requiring stretched fingers, A. Scriabin's Etude Op. 2 no.1, measures 15-19	53
Example 3-11. E. Rautavaara's <i>Etude</i> no. 1, measures 5-6	54
Example 3-12. Leap patterns, G. Bacewicz's <i>Etude no.3</i> , measures 11-16	55
Example 3-13. A. Scriabin's <i>Etude</i> Op. 42 no. 5, measure 54	56
Example 3-15, Sixth interval patterns, D. Rakowski's <i>Etude no. 39</i> , measures 1-3	57

Introduction

Purpose

Since its first appearance in ca. 1709, the piano has evolved to produce a bigger sound with a heavier action: its size, strings, sound, and range of volume are all bigger than those of the original instrument. Today's pianos have the heaviest action in history. Piano works, too, have expanded technically, with many difficult and diverse passages requiring outstanding physical abilities. Both developments have enabled pianists to achieve fame and wealth as virtuosi, but also have increased the possibility of injury.

Many 19th century pianists were famous piano teachers. Many of them wrote books of exercises. Franz Liszt, for example, wrote *68 Technical Studies, S. 146* containing specific technique passages or patterns. However, Liszt did not write the instructions and guide lines about motions of the body. Even a renowned pianist and teacher such as Theodor Leschetizky did not write such a book, although at least two of his assistants did, contradicting each other at times. In the 20th century, Leopold Godowsky, called a pianist of pianists, was a famous teacher. He also wrote *Progressive Exercises for Stretching and Making the Fingers Independent* including fundamental passages and patterns, but he did not write such a book containing the instructions and guide lines about motions. In the 19th century, many pianists including Robert Schumann suffered injuries due to misconceptions about piano technique. Even in early 20th century, many pianists such as Alexander Scriabin, Sergei Rachmaninoff, and Ignaz Friedmann suffered injuries. Obviously, more information on functional and pain-free technique was needed.

Many 19th-century and 20th-century piano pedagogues such as Tobias Augustus Matthay (1858–1945), Arnold Schultz (1886–1931), Heinrich Gustavovich Neuhaus (1888–1964), Otto

Rudolph Ortmann (1889–1979), György Sándor (1912–2005), József Gát (1913–1967), and Dorothy Taubman (1917–2013) worked to develop a pedagogy for healthy piano technique, for technical development as well as avoidance of injuries. Many focused on a scientific and anatomical approach to piano technique. Their antiquated writing style and use of jargon sometimes makes their works difficult to understand perfectly.

Seymour Fink's (b. 1929) *Mastering Piano Technique* book and DVD explains the basics of a healthy and functional technique with detailed descriptions, illustrations and an accompanying video, making it easy to understand his theories. His book details fundamental bodily movements, especially from the fingers to shoulders. My intention on this document is to apply his thinking to the standard technical patterns of piano learning such as scales, arpeggios, rotation, octave playing, repetition, leaps and interval.

Contents of this document

According to Fink, his theory is based on the work of Ortmann and Schultz.² In the first chapter of this document, I will briefly introduce many pedagogues' thinking including Ortmann and Schultz. In the second chapter, I will describe the relationship between Fink and Ortmann, referring to articles and reviews as well as the original texts. Afterward, I will introduce what Fink calls "Applied Movement" and "Synthesized Movement" because both parts indicate the movement in all parts of the piano playing mechanism: upper arms, shoulder girdle, forearms, hands and fingers.³ In the third chapter of the document, I will apply his theory to each of the

² Seymour Fink, *Mastering Piano Technique*, Amadeus Press: Portland (1992), 9.

³ Fink, *Mastering Piano Technique*, Part two and Part three.

standard technical patterns with examples. These will consist of piano etudes by composers and teachers from the 19th century to the present day.

Chapter 1. Piano technique from Bach to Ortmann and Schultz.

Since it's almost impossible to discuss Otto Rudolph Ortmann (1889–1979)'s and Arnold Schultz's (1886–1931) ideas on piano technique in isolation, I will first provide an overview of the development of piano technique from the period of the first generation of piano teaching to the present as background. Well versed in the theories of their time, Ortmann and Schultz were pupils of famous pianists and pedagogues and their work built on the accomplishments of previous generations.

Early keyboards such as the harpsichord and clavichord were very different from the first-generation piano (*Gravicembalo col piano e forte*) of Bartolomeo Cristofori (1655–1731), who invented the instrument in ca. 1709. Even though early pianos had heavier hammers, thicker strings and more complicated mechanisms than the harpsichord, these pianos could be played using finger movements alone. The piano music of the Baroque and early Classical eras did not have extensive dynamic markings, reflecting both the musical tastes of the time and the fact that dramatic dynamic contrast was not possible on the relatively light action of contemporaneous instruments. As a result, it was not necessary for keyboard players of the time to use the larger muscles of the body to produce sound.

Like Carl Philipp Emanuel Bach (1714–1788), keyboard teachers in the 18th century emphasized fingering and finger movements rather than the integrated movements from fingers all the way to the shoulders. C. P. E. Bach's *Essay on the True Art of Playing Keyboard Instruments*, which was published in 1753, discusses fingering and finger movements but does not elaborate on movements of the wrists, forearms, upper-arms, elbows and shoulders. The *Essay* was influential to many pianists at that time, including Franz Joseph Haydn (1732–1809),

Wolfgang Amadeus Mozart (1756–1791), Ludwig van Beethoven (1770–1827) and Carl Czerny (1791–1857). According to Gerig, the influence of the *Essay* soon was widespread; so much so that Haydn called it “the school of all schools” and Beethoven had his pupil Czerny work from it...Mozart as saying: “He is the father we are the children. Those of us who do anything right learned it from him. Whoever does not own to this is a scoundrel.”⁴ This suggests that physically speaking, it’s not very difficult to play the early works of those pianists on the pianofortes of Cristofori and his contemporaries using the methods from C. P. E. Bach’s *Essay*.

In 1801, Haydn received a piano from Sébastien Érard (1752–1831), a French piano builder who invented the double escapement in 1821, but Haydn felt that Érard’s piano was too difficult to play. In England, John Broadwood (1732–1812) manufactured his pianos with longer strings, three strings on each key, a thicker sounding board, heavier hammers and pedals similar to the modern damper and soft pedals from 1781 onwards.⁵ Viennese pianos had lighter hammers and a quicker movement of the piano action, whereas English pianos had bigger sound and broader sound range. Since Viennese pianists including Haydn composed works for the Viennese pianoforte, it could indeed be difficult to play their works on English pianofortes.

Since Érard applied the double escapement to piano action in 1822, many piano companies started to build in the English piano style. With the introduction of double escapement, musicians were able to compose and play more difficult passages, especially involving repetition, broader dynamic ranges and various forms of articulations. According to Stewart Gordon, pianists such as Muzio Clementi (1752–1832), Johann Nepomuk Hummel

⁴ Reginald R. Gerig, *Famous Pianists & Their technique* (Washington New York: Robert B. Luce, Inc., 1975), 25.

⁵ Gerig, *Famous Pianists*, 42-44.

(1778-1837) and Czerny still emphasized fingering and finger movements and composed exercise works for finger training specifically.⁶

Consequently, many pianists found that it difficult to play the evolving 19th century piano using a predominantly finger-based technique such as that described by C. P. E. Bach because the pianos in the early 19th century were heavier and bigger than previous ones.⁷ To improve their technique, pianists tried numerous experiments. One such was to strengthen the weak fourth and fifth fingers by exercise. However, focusing on finger-training only brought injuries to pianists such as Robert Schumann (1810–1856). Schumann trained his fingers with a machine of his own invention, causing injury to his fourth finger and the abandonment of his ambitious pianist.

Piano teachers and pedagogues moved their focus to weight technique. Ludwig Deppe (1828–1890) devised an effective system combining both arm movement and finger technique, and he became a pioneer in the pressure school. Although arm pressure touch was already discussed by William Mason (1829–1908), Sigsmund Thalberg (1812–1871), Friedrich Wieck (1785–1873) and Clara Schumann (1819–1896), Deppe made this theory more effective and systematic, though controversial to some.⁸ The approach of arm weight begins with the sitting position. Deppe suggests to sit low enough to make an incline position from elbow to wrist and in this position, and the fingers make more “penetrating” tone by striking the key (his students,

⁶ Marianne Uszler, Stewart Gordon, Scott McBride Smith, *The Well-Tempered Keyboard Teacher* (New York: Schirmer Books, 2000), 280-282.

⁷ Gerig, *Famous Pianists*, 229.

⁸ Gerig, 236.

Amy Fay and Elisabeth Caland maintained that the striking motion is not only to lift fingers but also let fingers “fall” onto the keys).⁹

Deppe’s pupils including Eugen Tetzl, Paul Stoye and Rudolf Maria Breithaupt (1873–1945) who was most influenced by Deppe’s ideas, continued to write studies discussing the functions of the arm.¹⁰ Breithaupt’s pioneering *The Natural Piano Technique* containing the concepts of ‘weight technique and relaxation’ and ‘a tone of authority and revelation’. The concepts of freedom of motion, relaxation and weight are the foundation of his method, which is achieved by focusing on arm movements, plus shoulder and torso flexibility with special emphasis being placed on the movement of muscles.¹¹ According to Breithaupt, this weight technique made it possible to play more demanding works. Breithaupt’s was greatly influenced by Leopold Godowsky (1879-1938) and his piano technique. Known as the “pianists’ pianist”, Godowsky also implemented the weight technique and taught principles of arm participation, weight transfer and relaxation technique from as early as 1892.¹²

A contemporary of Breithaupt, Tobias Matthay (1858-1945) developed his own methods which were more detailed and serviceable unlike his contemporaries’ work. Even though Matthay mentioned finger technique, he focused on the movement of forearm which he termed “rotation technique”.¹³ This technique is the most important element in the playing of tremolos,

⁹ Uszler, Gordon, Smith, *The Well-Tempered Keyboard*, 285.

¹⁰ Gerig, *Famous Pianists*, 329.

¹¹ Uszler, Gordon, Smith, 297-298.

¹² Gerig, 331.

¹³ Tobias Matthay, *The Visible and Invisible in Piano Technique* (London: Oxford University Press, 1932), 49-65.

trills, all forms of broken chords, thirds, sixth, octaves, as well as five-finger exercises and scales.¹⁴ The rotation technique originated from the weight technique but Matthay singled rotation out and developed it into his own unique theory. Gerig cited forearm rotation technique related to weight from Matthay's early book *The Act of Touch*:

Constant changes in the state of the fore-arm's rotary Release and rotary Support are imperative, if the fingers at opposite sides of the hand are to be equally "strong"; i.e., if the little finger and the thumb are to have equal successive apportionments of weight (or resistance) to act against, when one of these fingers is applied against the key. Weight must be released rotarily towards the little-finger side of the hand, when the little fingers is required to work effectively against its key.¹⁵

According to Gordon, "Matthay conceives transferring the weight of the hand alone from key to key... but in late in his career, he was sharply critical of Breithaupt and the weight-transfer concept."¹⁶ In his book *The Visible and Invisible in Piano Technique*, Matthay explained that there are two types of rotation technique, with one of them being the visible rotation and the other invisible (small movements and the release of muscular tension).¹⁷

Otto Rudolph Ortmann and Arnold Schultz made important contributions to piano pedagogy. Breithaupt and Matthay's weight technique occupied the world of piano technique in the late 19th and the early 20th century. In the interview with Fink, he mentions that Schultz was a pedagogue who unlocked the mechanics of hand/fingers motions, and Schultz's theories of hand and finger motions inspired him.¹⁸

¹⁴ Uszler, Gordon, Smith, 300.

¹⁵ Gerig, 391.

¹⁶ Uszler, Gordon, Smith, 303.

¹⁷ Uszler, Gordon, Smith, 303.

¹⁸ S. Fink, Personal conversation with Seonghyang Kim, March 2018.

Ortmann's book *The Physiological Mechanics of Piano Technique* considered many technique schools as well as elucidating his own theories backed by anatomical research. Ortamnn was born in Baltimore and he studied piano with George Boyle who was a student of Busoni at the Peabody Conservatory of Music. He worked as a piano teacher at Peabody Conservatory from 1917 until 1942. While he served as a piano faculty member, he also started his piano pedagogy research in about 1920. Especially, he worked individually with anatomists and physiologists at several hospitals and medical schools and engineers at the United States Bureau of Standards and at Western Electric.¹⁹ In a letter from Ortmann to Gerig, Ortmann said, "I do not now recall any fixed methodology [in my own early training], although, ramifications of the Leschetizky method were discussed, as were 'Liszt Technique,' 'Paderewski Technique' and the techniques of other 'schools'. In my earliest training, the weight approach was emphasized, and it was probably the limitation of this approach ... I had read Matthay's books carefully ... The explanations given me were so often the subjective expression of the player himself that the underlying physiological facts were unintelligible ... Thus, I began the laboratory work."²⁰

In *The Physiological Mechanics of Piano Technique*, Ortmann used many pictures and drawings to illustrate the human body in detail and more importantly, he discussed human fingers, hands, arms and torso at the skeletal, muscular and neural levels. For his research, Ortmann spent considerable time in the laboratory to examine and differentiate the techniques of

¹⁹ Gerig, 412.

²⁰ Gerig, 412-413.

previous pedagogues. Because of these ‘scientific’ approaches and his enormous effort, Ortmann’s theory was considered at the time to be more reliable than its predecessors.

In describing the use of muscles in piano playing, Ortmann maintained that muscular effort is needed to “drop” the arm onto the keyboard rather than to transfer the “arm weight”.²¹ He focused firstly on appropriate muscular tension and fixation in the joints. The arm movement is not executed merely by the transfer of arm weight; instead muscular contraction which makes the arm move. Ortmann believed that there is no movement without the force generated by muscular contraction. And this muscular activity with contraction as its underlying power can cause fatigue and overloading of the arm. To resolve this problem, he advocated relaxation, which is achieved through the movement of joints. For relaxation, he maintains that short rest periods in practice is very important to avoid fatigue because there is no complete relaxation. On the upper-arm, for example, when a set of muscles (triceps) relaxes, another set of muscles (biceps) should be contracted while a set of triceps should be contracted when a set of biceps relaxes. To avoid the incoordination of ‘hypo-relaxation (slower rate relaxation of a set of muscles than contraction of another set of muscles)’ and ‘hyper-relaxation (faster rate relaxation)’, he emphasizes to appropriate blending of relaxation and contraction.

. With regard to the skeletal aspect, Ortmann that believed joint function is an important element of piano technique Joints, as levers, work in synergy to form an ‘arc’, a structure which is related to forearm movement. Gerig made the observation that the two forearm bones joining near the elbow would rotate in an arc between 150° to 170° from supination (palm of the hand

²¹ Uszler, Gordon, Smith, 309.

facing up) to pronation (palm down), while the elbow joint was in use only in the context of arm bending and straightening.²²

Arnold Schultz, who published *The Riddle of the Pianists' Finger* in 1936, seven years after Ortmann's *The Physiological Mechanics of Piano Technique*, is the first major technique theorist after Ortmann, who had influenced Schultz greatly. Still, Schultz studied many theories by other piano pedagogues from the previous generation, including Leschetizky, Matthay and Breithaupt. He seemed to have encountered some problems in trying to apply those theories to his own playing. According to a letter from Schultz to Gerig:

Despite the fact that my first serious training in piano technique was under the weight-and-relaxation dogma, I outwitted it and managed somehow to develop a considerable octave-and arm-technique during my high-school years... I knew that my shoulder and elbow were fixed, sometimes very rigidly, during rapid octaves, but I found it impossible to forgo the musical effect... I felt I was somehow betraying my teachers even when the playing was going brilliantly... I began with Matthay, but while he described the kind of piano-playing I was intent on, he brought me no closer to specific control than I had been before... My two years with Gabriel Fenyves were pure Breithaupt, but this left me still further away from my goal... Ortmann's calm, clear, unargumentative statements concerning verified facts of joint-fixation in good piano playing to find that the whole relaxation dogma had suddenly gone up in smoke... I found the small muscles governing the first phalanges of the fingers exactly... After I had struggled with the pedagogics of small-muscles co-ordination, I had seen the broken mid-joint stroke as the primary evidence of small-muscle dominance... I had an impulse to strengthen Ortmann's influence by writing in the field of reference he had created.²³

Like Ortmann, Schultz emphasizes the movements utilizing levers (joints) and muscles. He represents a series of levers such as 'fingers against hand', 'hand against forearm', 'forearm against upper arm', and 'full arm against the torso or the entire body'.²⁴ In terms of muscular

²² Gerig, 416.

²³ Gerig, 447-450.

²⁴ Uszler, Gordon, Smith, 313.

movement, Schultz emphasized the combinations of muscle sets, especially focuses on the coordination of small muscles and joints for hands and fingers. According to Gerig, “A more desirable finger coordination is the *small muscles plus the long flexors* ... If the pull of the long flexors is greater, the mid-joint of the finger will tend to move up; if the small muscles dominate, the mid-joint may break or cave in ... About *small muscles alone*, William S. Newman has stressed the importance of applying the small muscle coordination to the light, rapid passage work found throughout Chopin’s works”.²⁵

²⁵ Gerig, 457-458.

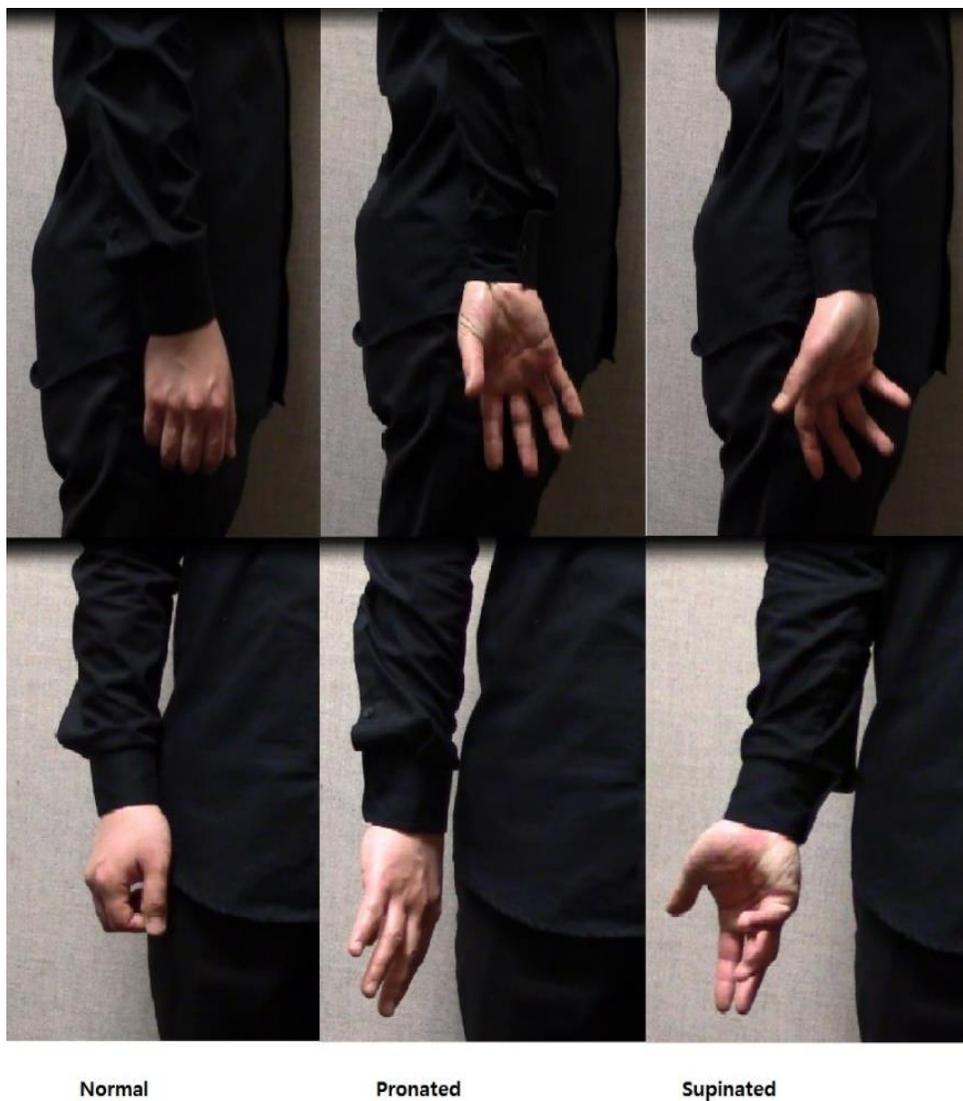
Chapter 2. Applied Movements and Synthesized Movements of Seymour Fink

In the first section of Fink's book *Mastering Piano Technique*, he introduces fundamental movements. There are several similar movements between Ortmann's joint movements (which I mentioned in Chapter 1) and Fink's primary movements in the first section of his book. In the second section of the book, he addresses 'Applied Movements' which refer to the processes of applying the fundamental movements mentioned in the first section to the piano. In the third section of the book, he discusses 'Synthesized Movements' which tackle complicated technical problems by utilizing the interaction of fingers with hands and arms.²⁶

Part 1. The influences of Ortmann and Schultz

Comparatively speaking, Seymour Fink's 'rotation cycle' covering a single pronating twist and a returning supinating twist is almost identical to Ortmann's forearm movement, and Fink's 'forearm push stroke is also almost the same as Ortmann's elbow joint movement (see figure 1-1 and 1-2).

²⁶ Seymour Fink, *Mastering Piano Technique*, (Portland: Amadeus Press, 1992), 74.



Normal

Pronated

Supinated

Figure 1-1. The rotation cycle²⁷

²⁷ Fink, *Mastering Piano Technique*, 29.

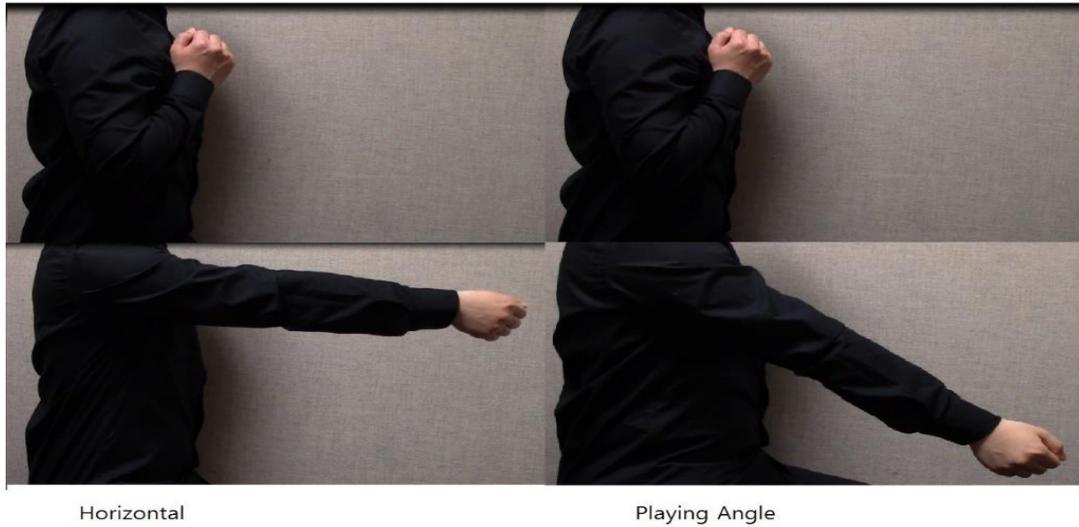


Figure 1-2. The forearm push stroke²⁸



Figure 1-3. The forearm push stroke-washboard motion: the usable part of the trombone-slide diagonal with pronated arms.²⁹

In the case of finger joints, Stewart Gordon notes that Ortmann's flat-finger stroke is realized through the movement of the knuckle joint functioning as the fulcrum of the lever with

²⁸ Fink, 31.

²⁹ Fink, 32.

minimal movement by the mid joint and nail joint, while Ortmann's curved finger stroke has a structure of arching finger with three curved joints. The flat finger stroke is meant for touching the keyboard with the pulp of the finger as cushion, whereas the curved finger stroke is for touching the keyboard with the fingertips.³⁰ These above-mentioned stroke motions are also very similar to Fink's four finger stroke motions.

According to Fink, Ortmann saw himself as an objective scholar, seeking to pin down the ultimate truths and relationships in movements at the piano. To him, piano technique was not a personal discovery, but a long term scientific inquiry into general principles. In particular, I was intrigued by Schultz's theories of hand and finger motions and the effect of a particular motion on other parts the hand. His findings suggest a means of expanding the color palate through the use of subtle variations in touch."³¹

With many similarities between the two, as Schultz drawn heavily from his predecessors, Ortmann in particular, Schultz's theory puts more focuses on the concept of lever and fulcrum than Ortmann's. In terms of their influence to Fink, he explained in the interview that Fink's Applied Movements are based on the concept of lever and fulcrum like Schultz's. In particular, Fink's finger stroke motions of Applied Movement correspond to the Chapter VIII of Schultz's book devoted to the finger strokes such as 'flat-finger stroke', 'curved-finger stroke' and 'finger key percussion'.³²

³⁰ Uszler, Gordon, Smith, 310-311.

³¹ Fink, Personal conversation with Seonghyang Kim, March 2018.

³² Arnold Schultz, *Riddle of the Pianist's Finger*, (Chicago: The University of Chicago Press, 1936), 101-134.

Part 2. Applied Movements

Fink presented five important movements:

- Upper arm and shoulder-girdle coordination with pushing, pulling, and cycling in the shoulder
- Forearm coordination with elbow movement
- Hand coordination with wrist movement
- Thumb coordination with palm-knuckle movement
- Finger coordination with hand-knuckle movement'

Interestingly, he emphasizes that the application of these five movements should begin from shoulder to finger, which is opposite to what many earlier pedagogues advocated, namely movement from fingers to the arm. Instead, Fink regards the shoulder girdle as the important point since it initiates and sustains the all actions from fingers to shoulder.³³

Part 2-1. Shoulder Girdle and Upper Arms

To train the shoulder girdle, Fink suggests in the Fundamental Movement of the book practicing 'arm cycling' both in the air and on keyboard (see figure 2-1). Arm cycling can get the pianist accustomed to the pulling and pushing of arms in a smooth manner. This motion, as a coordinated action between shoulder-girdle, upper arm and the elbow, allows the pianist to

³³ Fink, 27.

naturally proceed to the next steps such as ‘Pulling Arm legato’, ‘Pushing Arm Strokes’ and ‘Upper-Arm Gravity Drops’.



Figure 2-1. Arm Cycling ³⁴

Supported by the shoulder girdle, upper arms and their movement come into focus next; these movements are pivotal to a good piano technique. According to Fink, the pulling arm legato is the coordinated motion of lateral wrist (and shoulder) circling motion and the single plane up-and-down wrist movements (vertical movements without lateral circling). The lateral wrist and shoulder circling allow pianists to move their arms with smooth and free turning motion and ultimately allow them to support various finger patterns that can be organized within the cycles.³⁵ He then divides the pulling Arm Legato into ‘Pronating Circles’ and ‘Supinating Circles’ (see figure 2-2).

³⁴ Fink, 51.

³⁵ Fink, 78.

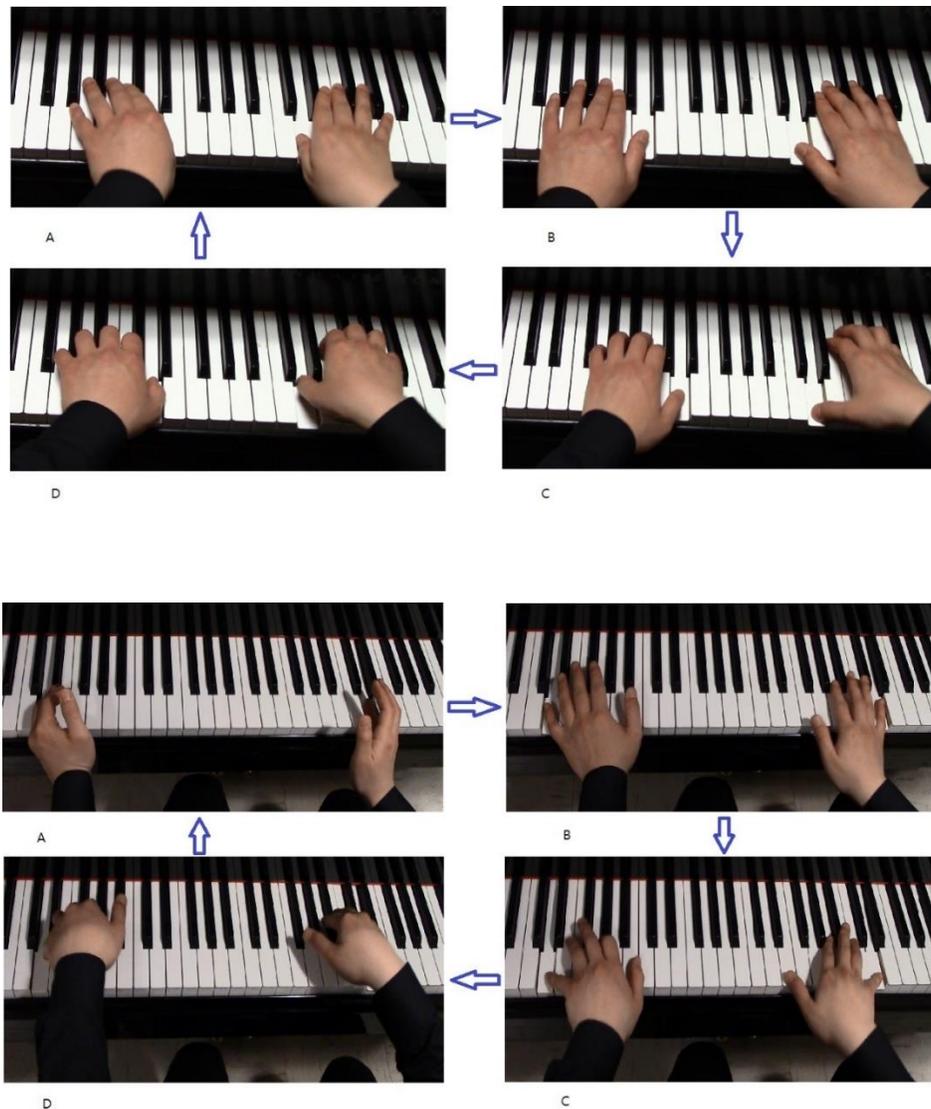


Figure 2-2. Pulling arm legato: Pronating Circle (top) and Supinating Circle (bottom)³⁶

The figure 2-2 shows that the direction of the pulling-pronating circle is counter-clockwise for the right hand (clockwise for the left hand). And the step-by-step progression is the following (for the right hand):

³⁶ Fink, 79, 81.

1. The circle starts with thumb on D key (A).
2. Pull hand and forearm towards the body slightly by tucking the elbow (B).
3. Slide the hand and wrist outward (to the lateral side) in circular motion (C).
4. Then move the hand and forearm up and forward by extending the elbow and the hand goes to a scooping position (D).

Likewise, the direction of the pulling-supinating circle is clockwise for the right hand (counterclockwise for the left hand). The progression is the following (for right hand):

1. The circle starts with fifth finger on D key and the hand in an open and extended posture (A).
2. Pull the hand and forearm backward (towards the body) by tucking the elbow (B).
3. Slide the hand and wrist inward (to the medial side) in circular motion (C).
4. Then move the hand and forearm up and forward, so that it's ready to start the whole cycle again (D).

The following step is the 'Pushing Arm Strokes'. This circular motion starts at the shoulders and moves the upper arms forward. After playing a key with the thumb, pianists need to push their hands and forearms forward, which slide in half-circular motion (see figure 2-3).

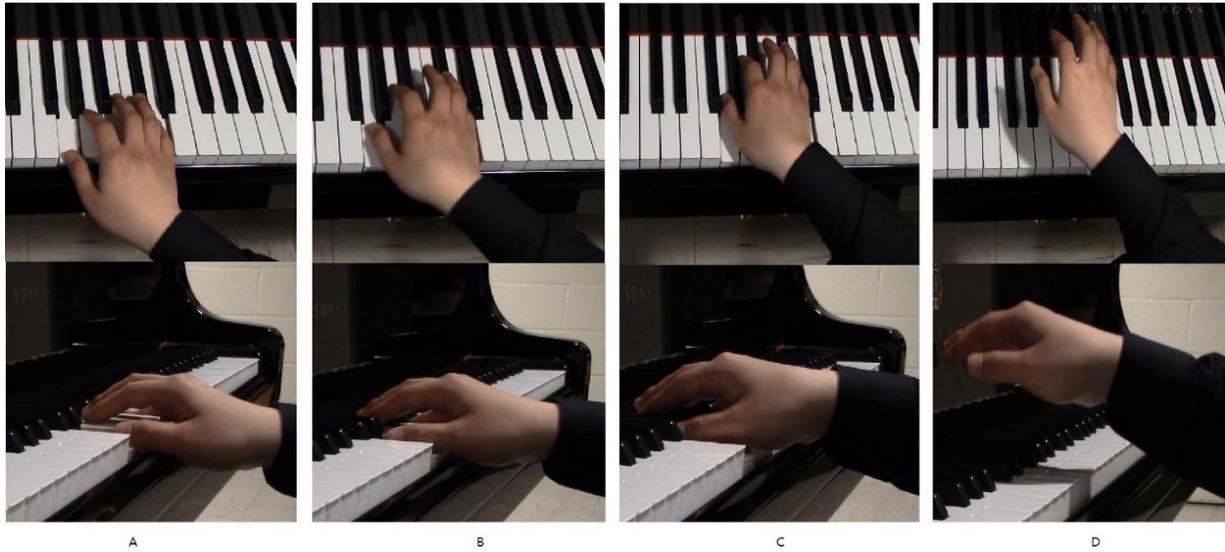


Figure 2-3. Pushing Arm Stroke.³⁷

Next, Fink mentions the ‘Upper-arm gravity drops’. He describes it as: “a portion of the pulling arm cycle (see figure 2-2) combined with free fall... There are two forms of the coordination: a low-wrist form and a high-wrist form... Both require that the upper arms be freely released in the shoulders and that they be close to the body.”³⁸ This motion is somewhat the opposite of the ‘pushing arm stroke’: Vertically speaking, the direction of the pushing arm stroke is ‘from low to high’ and horizontally speaking, it is ‘from the body to piano’, whereas the low wrist upper-arm gravity drop moves ‘from high to low’ and ‘from piano to body’(see figure 2-4).

³⁷ Fink, 83.

³⁸ Fink, 87.

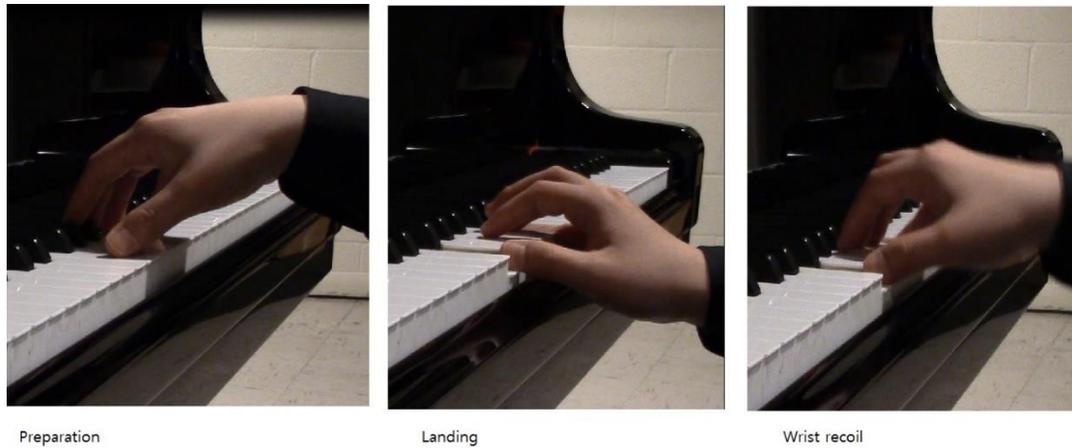


Figure 2-4. Upper-arm gravity drop with low wrists position³⁹

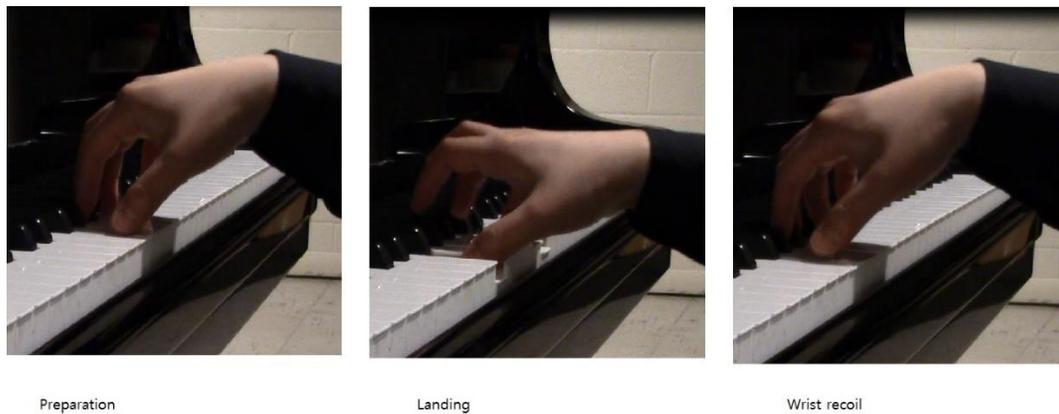


Figure 2-5. Upper-arm gravity drop with high wrists position.⁴⁰

Fink also provides a high wrist version of the upper-arm gravity drop. This high wrist motion requires more muscular contraction of the large back muscles to speed the pulling of the upper arm. On the vertical plane, the motion of the hand is high-low-high, while on the

³⁹ Fink, 87.

⁴⁰ Fink, 88.

horizontal plane, the motion is piano-body-piano (see figure 2-5). Both versions require the wrist's up and down movement as well as the recoil of the wrist.

Within the 'Upper arms and Shoulder girdle' category, Fink suggests an additional motion called 'Supinated finger stretches' (see figure 2-6). Even though pulling arm legato motion is very serviceable to pianists in many piano techniques such as scales and chords, broken chords passages (or arpeggio passages including rolling passages), requiring large spaces between fingers can still be challenging. "Supinated finger stretches' is basically a finger motion, but it is closely associated with the 'pulling arm legato'. In fact, the pulling arm legato itself does not need any finger stretch for scales, compact rotation patterns, trills (and compact tremolos) and compact blocked and broken chords, as its circular movement pattern has already given the pianists enough movement to play these musical elements with comfort and ease. With supinated finger stretches alone, but no pulling arm legato motion, these passages become quite difficult, because there is a limit in the stretchable distance between the second, third, fourth and fifth fingers. Thus, pianists need the coordinated motion which combines pulling arm legato and supinated finger stretch to play music that requires large spaces between the fingers.



Finger Abduction



Finger Flexion

Figure 2-6. Supinated finger stretches.⁴¹

Part 2-2. Forearms

The next movement category concerns the forearms. These movements are based on forearm strokes while taking advantage of the drop motion. The upper arms and elbows move in very small motions, but they provide support for the forearms which can therefore have the natural free drop motion, in which the elbow joint acts as the fulcrum of the lever. Fink further divides the forearms movements into three types, namely 'Forearm Bounce on Palm Finger-Correspondence', 'Lateral Forearm Skip' and 'Forward Gravity Drops-Rebounds'.

⁴¹ Fink, 94.

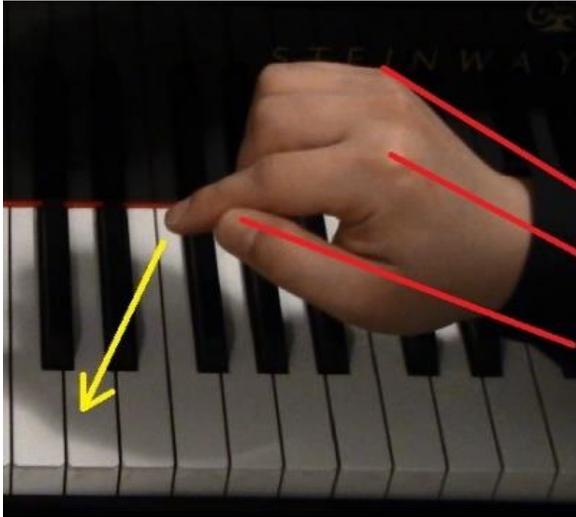


Figure 2-7. Three primary hand positions, B. Palm position.

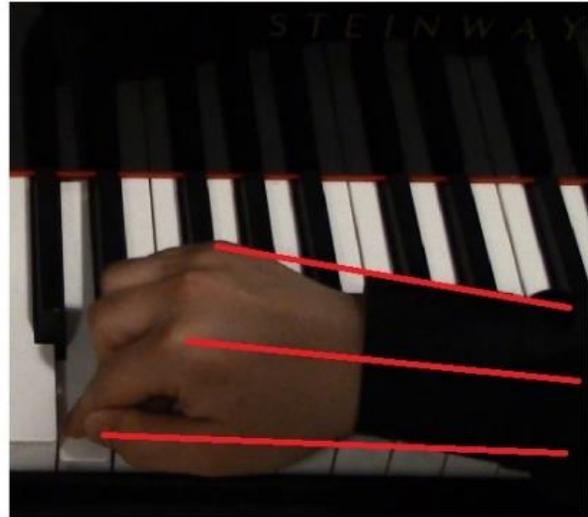
According to Fink, “In this fundamental exercise, forearms bounce on supported palm-positioned fingers (see figure 2-7) that are optimally arranged with respect to the hands and arms. I use the term *correspondence* to denote this alignment. When a finger is in correspondence at a particular place on the keyboard, the finger, hand, and arm are so arranged as to give the finger its maximum strength (see figure 2-8 and 2-9).”⁴² Here, the ‘forearm pushing stroke’ (see again figure 1-2), especially the ‘forearm push stroke-washboard motion’ (the usable part of the trombone-slide diagonal with pronated arms) (see again figure 1-3) is the foundation of the ‘forearm bounce’ movement. It is important that the neighboring fingers (which do not play) need to support the finger that lands on the key. For example, when you are using the index finger, your thumb and middle finger should be pressed against the index finger for additional support. With neighboring finger support, the finger stroking on the keyboard can become more powerful. Another important point of this movement should be made here is that the alignment

⁴² Fink, 96.

between fingers and elbows should be maintained by using rotation technique (the moment when you drop your forearm, the horizontal direction of the movement of forearm should be a little bit pronated (to the body) but the elbow should also move a little against the body).



A. Preparation



B. Landing

Figure 2-8. Forward diagonal patch of the forearm stroke.⁴³

⁴³ Fink, 96.

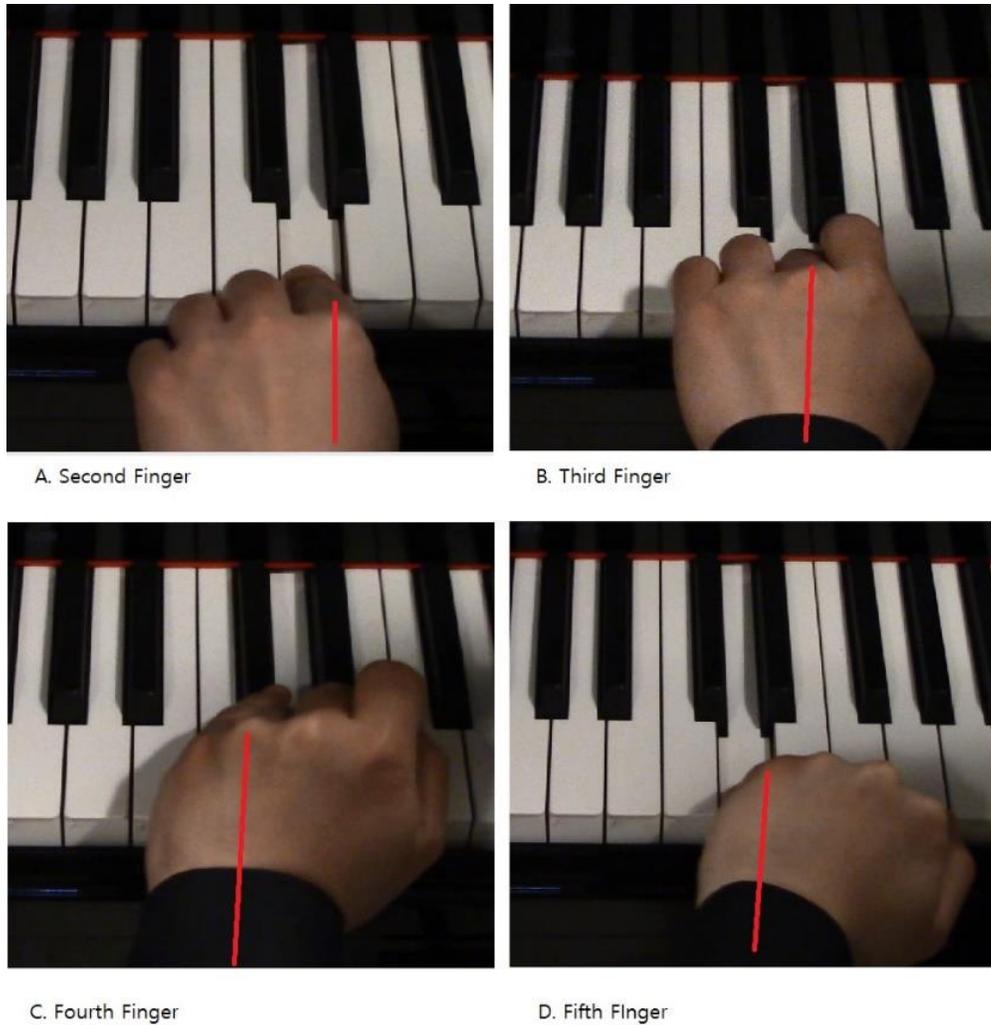


Figure 2-9. Fingers in palm and correspondence position.⁴⁴

In Fink's analysis, the following three steps are crucial for the 'forearm bounce':⁴⁵

1. Adjust wrists slightly to the inside to center your forearms behind the second fingers (hands abduct).
2. Adjust wrists vertically to align your straightened finger phalanges with the diagonal

⁴⁴ Fink, 97.

⁴⁵ Fink, 98.

of the stroke.

3. Pronate arms sufficiently to position fingers minimally inside the vertical: elbows move away from your body adding an outward dimension to the forward diagonal stroke.

The ‘Lateral Forearm Skip’ motion is in essence a leap exercise. Vertically speaking, a pianist needs to apply the ‘Forearm Bounce on Palm Finger’, while horizontally speaking, the upper arm helps the lateral movement of the forearm. That is to say, forearm’s horizontal movement stems from the motion of the upper arm. Therefore, to execute the ‘Lateral Forearm Skip’ the pianist should use a coordinated move combining the ‘Forearm Bounce on Palm Finger’ and ‘Lateral Motion (see figure 2-10)’.



Abduction (Blue) and Adduction (Red)

Figure 2-10. Lateral motion-arm abduction: the basis for moving sideways at the keyboard.⁴⁶

The ‘Lateral Motion’ is a fundamental motion to practice how to increase (Abduction) and close (Adduction) the distance of both elbow and upper arm from the body. In wide leaps, when the distance of the upper arm (and elbow) is very close to the body, it is not easy to play since forearm can only be used within the horizontal angle of the elbow.

⁴⁶ Fink, 33.

The last motion in the forearms movement category is the ‘Forward Gravity Drops Rebounds’. This motion is a good exercise for repetition patterns (see figure 2-11). The A motion in figure 2-11 is the almost same as the ‘Forearm Bounce on Palm Finger’, except that it does not require a strict alignment. The B motion is like a small repeated version of the ‘Forearm Bounce on Palm Finger’ rebounding from keyboard. For this exercise, Fink suggests the use of rhythmic patterns (see figure 2-12). The first note of each rhythm begins with the stroke motion, but the following notes should be played with ‘rebound’ motion.

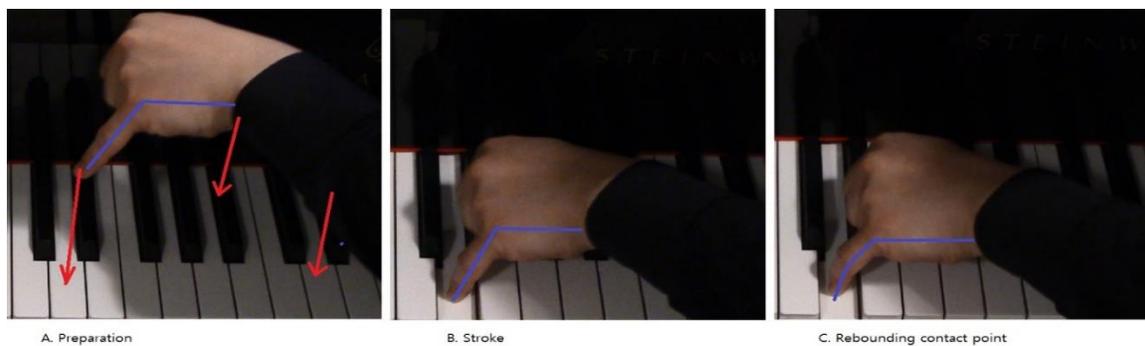


Figure 2-11. Forearm gravity drop-rebounding position.⁴⁷



Figure 2-12. Rhythmic exercise routine for rebounding.⁴⁸

⁴⁷ Fink, 102.

⁴⁸ Fink, 103.

Part 2-3. Hands

Hand movements are achieved by the coordinated movements of the wrist. Just as the elbow plays the role of the fulcrum in forearm movements, the wrist functions as the fulcrum of the lever to make the hand move. This category is subdivided into the 'Hand Bounce' and 'Scoop Chords'. 'Hand Bounce' motion is based on the vertical movement of wrists while 'Scoop Chords' motion is a coordinated motion with both vertical and horizontal movements.

Like 'Forearm Gravity Drops-Rebounds', the 'Hand Bounce' is for repeated patterns. Because the 'Forearm Gravity Drops-Rebounds' uses elbows (large joints connecting forearms and upper-arms) as the fulcrum, it is difficult to achieve a fast speed when repeating one note-repetition, octave-repetition and chord-repetition. On the other hand, the 'Hand Bounce' motion permits the pianist to play the repetitions in a faster tempo because in this motion the wrists support only the hands, which are lighter than the forearms due to having smaller muscles. As a consequence, wrists can react faster than elbows in rebounds. For this motion, Fink argues that the high wrist position can make the rebounding movement easy and free. The drop motion and rebound motion derive from the wrists' vertical movement only (see figure2-13), and the drop motion should be executed as a free-falling motion. When the hands retract from the keyboard, the hands do not have to lift higher than wrists.

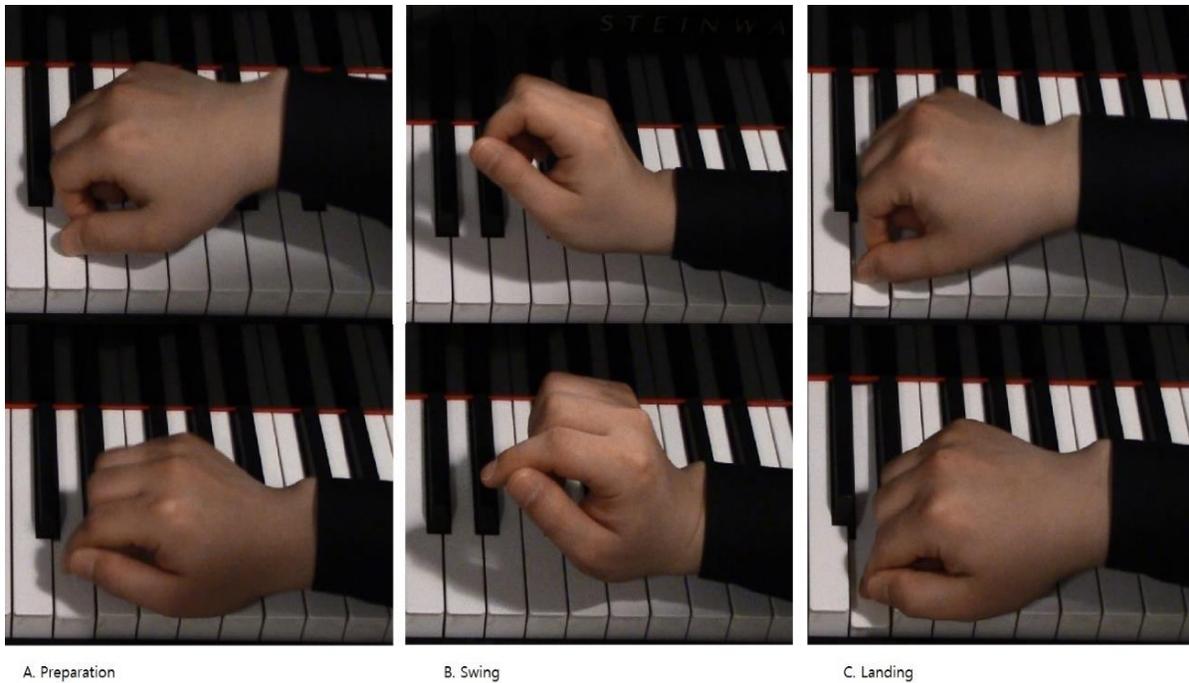


Figure 2-13. Hand bounce.⁴⁹

The ‘Scoop Chords’ motion is an exercise for broken chords (with fast tempo) as well as chords in general and is based on ‘hands scoop’ (see figure 2-13). Here, wrists need to be kept in low position and the fingers should stay on keyboard prepared, and then the hands scoop the keyboard with a sharp and quick stroking motion.

Part 2-4. Thumbs

The thumb is the only finger which is capable of both vertical and horizontal movements. Thumbs also have a mid-joint and nail-joint, but unlike the other fingers which have knuckle joints, thumbs are linked to the side of the palm through palm knuckles. As a result, the thumb

⁴⁹ Fink, 106.

can move to various directions, but the speed of the movement is slower than movement of the other fingers. According to Fink, “the primary disadvantage of the thumbs is their shortness... Nevertheless, various correspondence manipulations can compensate for this disadvantage, including arm pronation, lowered arches, abducted hands, and playing longer fingers near the fallboard... Students need special instruction in swinging thumbs from their primary connection to the hand, especially in the vertical plane.”⁵⁰ Because of its different status, Fink deals with the thumb separately and suggests three motions suitable only for thumbs.

The first motion is ‘Thumb Movement-Adduction and Flexion’ (see figure 2-14). This movement is a vertical stroke by the thumb with the rotation of the wrist and forearm. To practice this motion, taking the right thumb as an example, the thumb should be lowered by the wrist and forearm rotating counterclockwise (pronating as thumb dropping), with the fifth finger as the axis which stands in its position. In this case, the fifth finger should be kept pushed down.



Figure 2-14. Vertical thumb stroke.⁵¹

⁵⁰ Fink, 112.

⁵¹ Fink, 113.

The second motion is ‘Collapsing Midjoint-Lateral Thumb Movement’ (see figure 2-15).

This motion is a solution to the thumb midjoint collapse without control. Fink suggests the following three steps for this motion:⁵²

1. Grasp the midjoint on the thumb of the right hand with the first two fingers of the left hand and stretch the palm bone back to its limit. Let go of the midjoint and force the palm bone’s own extensors to hold the midjoint in place.
2. Place both hands in extended position. While holding the palm bones firmly back, flex the mid-and nail joints of both thumbs to claw position
3. While holding a tight claw position, work palm knuckles in the vertical plane.



Correct midjoint alignment

Figure 2-15. Collapsed thumb midjoint.⁵³

⁵² Fink, 114.

⁵³ Fink, 114.

The last movement for the thumbs is ‘Flexibility and Correspondence’. This movement also requires the rotational movement of flexible and relaxed thumbs. However, without the pronating motion of wrists and forearms, the thumbs cannot move flexibly. The thumb is often used in crossing finger technique because thumb can move in both vertical and horizontal directions. This movement is further divided into ‘thumb Flexibility’ (see figure 2-16) and ‘lateral thumb movement with arm rotation’ (see figure 2-17).



Figure 2-16. Thumb flexibility.⁵⁴

⁵⁴ Fink, 116.



A. Pronated position



B. Supinated position with crossing finger

Figure 2-17. Lateral thumb movement with arm rotation.⁵⁵

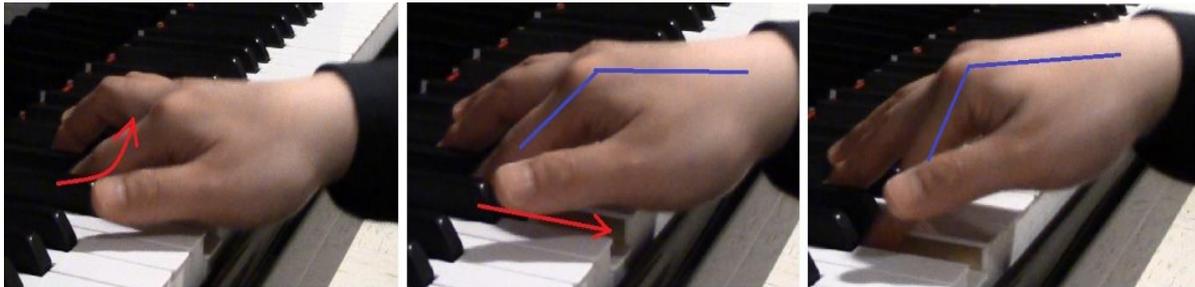
Part 2-5. Fingers 2 through 5

For fingers other than the thumb, the basic motion is a vertical stroke motion, because those fingers do not move well horizontally. Fink suggests four movement categories for fingers two to five, the ‘Pulling Finger Strokes’, ‘Collapsing Fifth Fingers-Lateral Strength’, ‘Overlapping legato’, and ‘Sidesaddle Walking-Substitution Practice’.

The first movement is the ‘Pulling Finger Strokes’. Fink subdivides it into ‘Small muscle squeezing stroke’ (figure 2-18), ‘Finger snap stroke’ (figure 2-19), ‘Scratch touch stroke’ (figure 2-20) and ‘Unprepared pulling finger stroke’ (figure 2-21). These are all vertical movements that can be derived from the ‘Forearm Bounce on Palm Finger’ movement. Training in the first three gestures improves positioning, control, flexibility, speed, strength, and subtlety in finger

⁵⁵ Fink, 117.

movement. The small muscle-squeezing stroke is in essence a finger sliding motion. Here, the second finger of the right hand is placed on the inner part of a key in a flat finger position, and then the finger is dragged outward (toward the body) while folding the knuckle joint only. The finger snap stroke is very similar to the small muscle squeezing stroke, except that the finger is not as flat, when it pulls outward the midjoint and nail joint are also folded. The scratch touch stroke is a coordinated motion combining the first two motions. And lastly, the unprepared pulling finger stroke is similar to the vertical thumb stroke. In this motion, as the thumb pushes a key, the second finger moves vertically with a little pronation (toward the body).



A. Preparation

B. Squeezing contact with the bottom of the key

Figure 2-18. Pulling fingers-the small muscle squeezing stroke.⁵⁶

⁵⁶ Fink, 119.



A. Preparation



B. Finger snap release

Figure 2-19. Pulling fingers-the finger snap stroke.⁵⁷



Figure 2-20. Pulling fingers-the scratch touch stroke.⁵⁸

⁵⁷ Fink, 120.

⁵⁸ Fink, 121.



A. Preparation

B. Landing

Figure 2-21. The unprepared pulling finger stroke.⁵⁹

The next movement exercise, ‘Collapsing Fifth Fingers-Lateral Strength’, is recommended to overcome the weakness of fifth fingers, where Fink suggests three sub-divided motions, namely ‘Karate position’, ‘Hand abduction’, and ‘Pivoting towards a pronated position’ (see figure 2-22). These three motions all require the unfolding of the midjoint and nail joint.



A. Karate position

B. Hand abduction

C. Pivoting towards a pronated position

Figure 2-22. Fifth-finger lateral strength.⁶⁰

⁵⁹ Fink, 122.

⁶⁰ Fink, 125.

The third movement of the part ‘Fingers 2 Through 5 in his book’ is ‘Unfolding Finger’, which consists of ‘claw position’ and ‘palm position’ (see figure 2-23). These motions are very similar to ‘Flexibility and Correspondence’. To improve this motion, Fink suggests that “Begin by placing claw-positioned hands on the bottoms of adjacent white keys... Withdraw arms along the trombone-slide diagonal by slowly unfolding fingers to palm position without releasing the keys; arches and forearms raise.”⁶¹



Figure 2-23. The unfolding finger stroke.⁶²

The last motion is ‘Sidesaddle Walking-Substitution Practices’ (see figure 2-24 and 2-25). These exercises are very important for the good articulation with 3-4-5 fingerings. Due to the different length and uneven powers of the fingers, Fink emphasizes that pianists have to balance and somehow even ‘equalize’ them. Since the fifth finger is the shortest and the fourth finger is a little bit longer than fifth finger and the third finger is the longest, in this case, the longest third

⁶¹ Fink, 129.

⁶² Fink, 129.

finger should be stretched more than fourth finger and the fourth finger should be stretched more than fifth finger to make these fingers the same length.



5 touches behind 4 which touches behind 3

Figure 2-24. Sidesaddle position of the right hand.⁶³

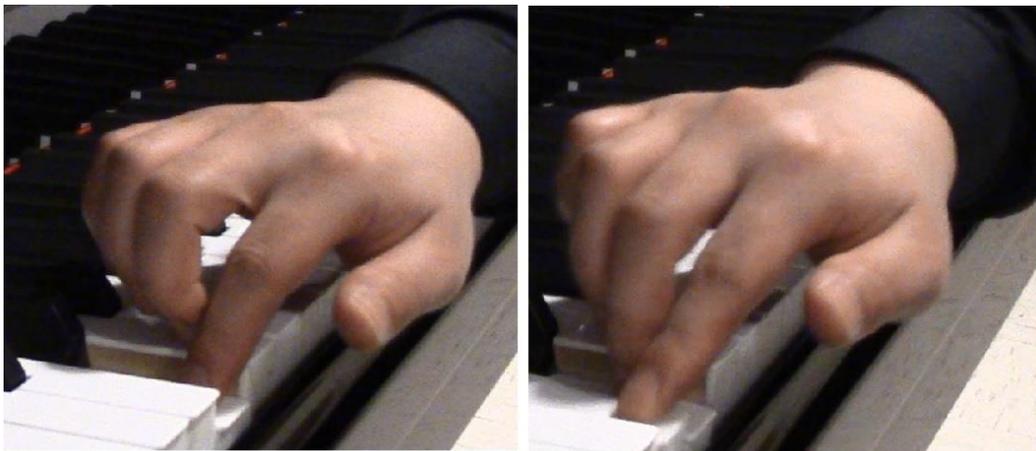


Figure 2-25. Sidesaddle two-finger walking.⁶⁴

⁶³ Fink, 132.

⁶⁴ Fink, 133.

Part 3. Synthesized Movements

In the synthesized movement, Fink examines three large categories: ‘Legato Movements’, ‘Lateral Movements’, and ‘Release Movements’. Those three movements are based on all of the motions and exercises from the previous Applied Movement section. He does not go into greater details but does suggest some useful exercise patterns. Therefore, each movement in Synthesized Movement section will only be reviewed very briefly here because Chapter 3 will give ample examples that are relevant to his theory and his exercise paradigms devoted to fundamental technique patterns.

In the ‘Legato Movements’ category, Fink introduces ‘Joggle Movement-Chordal Repetition’, ‘Forearm-Finger Grouping’, ‘Upper-Arm Gesturing-Cycles’, and ‘Finger Length Adaptations’. The joggle movement-chordal repetition requires the ‘Pulling Arm Legato’ movement to make strong and flexible legato connections by each finger. According to Fink, “A movement that I call *joggling* implies a relaxed, subtle arm movement that underpins each and every connecting finger. When unnecessary tensions in the playing mechanism evaporate and the tempo is not too quick, pulling upper arms are able to unite with separately stroking fingers to produce strong, flexible, legato connection. This combined touch is particularly useful in executing slow to moderately paced notes that call for an extended dynamic range.”⁶⁵ He suggests the pianists to train for ‘pulling joggle (pulling upper arm joggle)’ which makes use of the pronating circle motion of each finger, ‘pushing joggle (pushing forearm joggle)’ which requires the pushing movement with high wrists and the unfolding of fingers, as well as

⁶⁵ Fink, 142.

‘rotational joggle’ which is enabled by the forearms’ rotation movements. A ‘Forearm-Finger Grouping’ is aimed at playing a motivic unit (group) of at least two notes, and to play the motivic unit, pianists need to utilize a combination of the single forearm drop motion and finger snap motion. The ‘Upper-Arm Gesturing-Cycles’ is a single-directional motion that is conducive to speed, clarity, flexibility and endurance. This gesture has three ways to support finger velocity: pulling with scooping hands, pronating to the outside, and pushing to move forward.⁶⁶ The ‘Finger Length Adaptations’ does not require the actual same length of fingers. This maneuver is related to the height of fingers measured from the keyboard. The essence of this movement is that pianists need to adjust the height of fingers to roughly the same level by manipulating the joints of fingers.

In the ‘Lateral Movements’ category, Fink comes up with ‘Lateral Extension-Preparation Shifts’, ‘Walking Rebounds-Parallel Motion-Octaves’, and ‘Fake Legato’. All of the movements are based on horizontal movements by the forearms and upper-arms. ‘Lateral Extension’ is an exercise for passages featuring leaping notes, no matter whether they are single note, intervals (including octave) or chords. In such a passage, after playing a central key, pianists need to prepare the hand for the next note but cannot stroke and should freeze on the aimed key. This training can make the shift from a note to the next one over long distance very fast. The ‘Walking Rebounds-Parallel Motion-Octaves’ is based on the single forearm gravity drop motion, played in a fast tempo. This movement requires a coordinated motion of the single forearm gravity drop, forearm rebounds and hand bounce. The ‘Fake Legato’ is for a pattern featuring the continuous shifting of the fifth finger to thumb that can be seen in patterns like

⁶⁶ Fink, 152.

overlapped broken octaves (thumb → fifth-thumb → fifth-thumb → fifth). This ‘Fake Legato’ requires the coordinated motion of forearm rotation and finger-snap motion.

In the ‘Release Movements’ category, Fink presents three exercises, namely ‘Hand Releases’, ‘Hand-Finger Staccato’, and ‘Finger Releases’. For the ‘Hand Releases’, pianists need to flexibly blend the hand scooping motion, upper-arm gravity drop, and push/pull arm cycle. This motion requires the hands and wrists staying relaxed while preparing the next motion. The ‘Hand-Finger Staccato’ motion is a good solution for non-staccato patterns. This motion requires both fingers snapping and hands rebounding. The ‘Hand Releases’ motion can be helpful in very fast five-finger techniques such as penta-scales. The important point here is that after dropping a finger, the next finger will play with a very relaxed dropping motion, and simultaneously the previous finger should be lifted and released quickly.

Chapter 3. Applying Seymour Fink’s Theory on Fundamental Technique Patterns.

Scales

Pianists encounter many different scale types, including major, minor, chromatic and pentascales, ascending and descending. The thumb, second finger and third finger are used predominantly; the fifth finger only at the top (right hand) or bottom (left hand), due to the fact that the distance between the thumb and fifth finger makes crossing very difficult. The thumb is the axis in finger-crossing, playing the most important role in scale playing.

Carl Czerny's *The Art of Finger Dexterity, Book II, Op. 740, No. 13* contains many scale patterns (see example 3-1). For right hand part from E4 to F5, the fingering has two finger-crossing moments. The first finger-crossing appears on E4-F4 with 2-1 fingering and the second finger-crossing appears on B4-C5 with 4-1 fingering. The second finger-crossing is difficult because the distance from the thumb to the fourth finger is more extended. To play E4, the hand should be prepared with the motion of 'Pulling Arm Legato-Pronating Circle' (figure 2-2). Next, pianists need to implement the 'Supinated position with crossing finger' of the 'Lateral thumb movement with arm rotation' (figure 2-16). Pianists would use the fourth finger on B-flat4 and thumb on C5, but in this case the distance between B-flat and C is too great to play with only crossing finger motions. As a result, pianists would should use both 'Pulling arm legato-supinating circle' (figure 2-2) and 'finger snap' (figure 2-18).



Example 3-1. A scale pattern of Czerny's *Op. 740, No. 13*, measures 1-3.

In case of the 3-4 fingering from A4 to B-flat4, I recommend practicing 'the Sidesaddle Walking' (figure 2-21) and 'Finger Length Adaptations' (figure 2-24). In the case of the last two notes in the first measure, the distance between the third finger on E-flat5 and the fourth finger on F5 is quite large, and therefore the 'Supinated finger stretches' can be helpful. To practice these two notes, the wrist and forearm should work in circular motion.



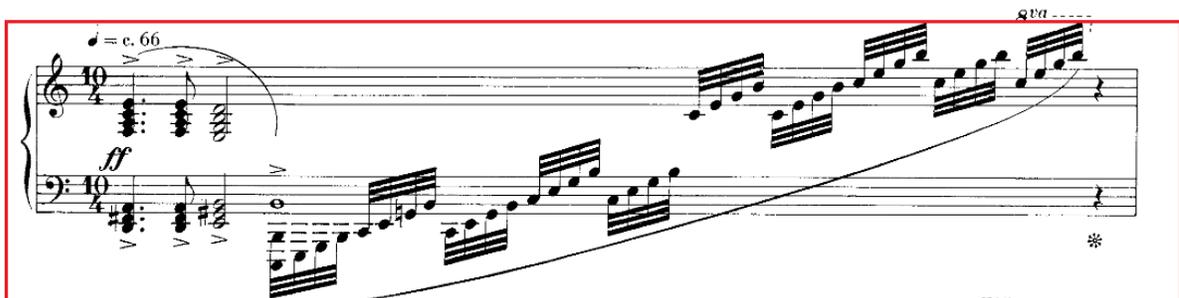
Example 3-2. A penta-scale pattern of Glass's *Etude No. 6*, measures 126-127.

In Philip Glass' *Etude* no. 6, the f minor scales substantiate in two forms. One of them is f minor ascending penta-scale, which would require the 'Supinated finger stretches' for the 4-5 fingering from B-flat4 to C5. After going over one entire octave, the thumb turns to F4, and for this motion I would recommend using the 'Pulling arm legato: Supinating Circle'. Rather than keeping the hands in a fixed position and using only fingers, this maneuver is immensely helpful

in terms of playing accurately and avoiding tension, especially in the case of small-handed pianists.

Arpeggios

Even though many arpeggio or broken chord passages do not require the stretching of the 3-4-5 fingers, pianists still face many other passages which require stretches between them. Practicing the ‘Supinated finger stretches’ would be a great help when stretching motions are involved. In addition, the ‘Joggle Movement’ is also a good exercise for broken chord patterns. Einojuhani Rautavaara’s *Etude Op. 42, no.1* provides a good example for this kind of passages (example 3-3). The arpeggios featuring intervals of a third in both right hand and left hands. To play this pattern in a fast tempo, pianists should adopt the hand scoop and hand snap motion. To shift to the next pattern easily, I recommend practicing the ‘Lateral Extension’ exercise.



Example 3-3. An arpeggio pattern (broken chord pattern), E. Rautavaara’s *Op. 42 no.1*, measure 1.

In Scriabin’s *Etude Op. 42 no. 5*, some arpeggio patterns require large-span stretches (example 3-4), which can benefit from applying the ‘Supinated finger stretches’ and the ‘Pulling arm legato: both pronating and supinating circles’. The ‘Lateral motion-arm abduction’ (figure 2-

10) will help with maintaining the alignment while playing descending arpeggios, whereas the ‘Supinating crossing finger’ will facilitate the ascending arpeggio in measure 22.

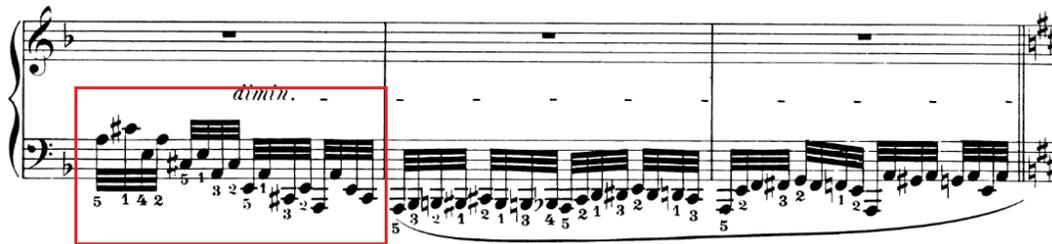
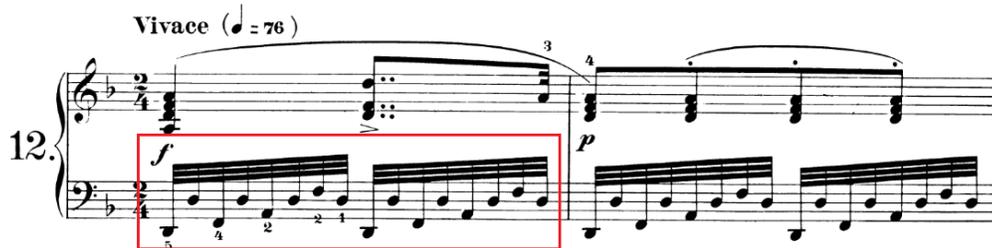


Example 3-4. A. Scriabin, *Etude Op. 42 no. 5*, measures 20-23.

Rotation

The rotation technique in general is fundamental to trill, tremolo, and any other patterns of rotation that requires rotation because those passages need left-right motion (pronate-supinate motion) by hands, wrist and forearms. Without lifting the fingers, the rotation movement can make easy to play these passages. The rotation pattern in focus here consists of single note ‘zigzag’. For this pattern, pianists are advised to practice the ‘rotating joggle’ movement using forearm rotation. Without this coordinated motion, pianists cannot achieve good articulation with this pattern. Czerny’s *The Art of Finger Dexterity, Book II, Op. 740, No. 12* contains two kinds of rotations patterns (example 3-5). In the first one the thumb stays on the same key, while in the

second pattern the thumb moves to a different key. One should approach these patterns with forearm rotation, as well as stroke motions such as ‘Forearm bounces’, ‘Vertical thumb stroke’, and ‘Finger snap’.

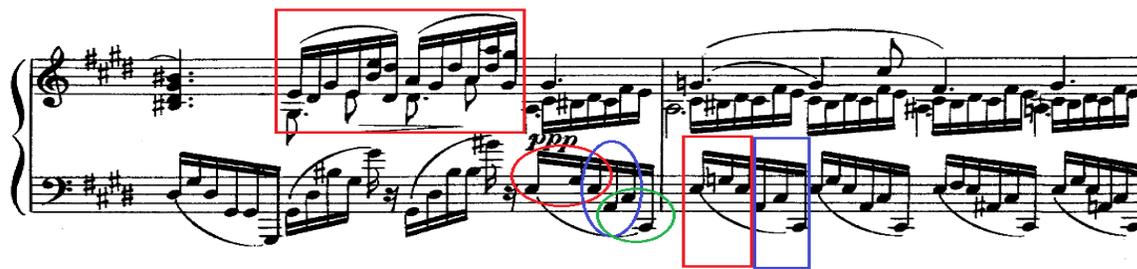


Example 3-5. Rotation (top: staying thumb; bottom: moving thumb, Czerny’s *Op. 740 no.12*, measures 1-2 and measures 35-37.

In case of Scriabin’s *Etude Op. 42 no. 5*, the rotation patterns do not take a generalized shape, but combine different movements (example 3-6). The right hand in measure 8 can profit from two types of rotations; one (in the red square) requires the stretched palm and stretched 3-4-5 fingers; the other one uses very compact rotation. For the former kind, the pianist should first practice the three primary hand positions ‘Extended-palm-claw position’ (figure 2-7). In measure 9, the inner voice played by the right hand demands very compact rotation pattern. However, because of the need to hold the top notes such as G4, C-sharp5, F-sharp4 and G4, the distance among each finger is varied. To execute this compact rotation comfortably, the ‘Pulling fingers-

the small muscle squeezing stroke' (figure 2-17) and the 'Unprepared Pulling Finger Stroke' (figure 2-20) are very important. The former motion can produce quality sound in pianississimo and help the smooth connection of notes, while the latter motion is conducive to the balance between dropping (1)-2-3-4 fingers and holding top notes.

The shaping of the left hand can be divided into one group with two rotations and another one with three rotations. On the first beat of measure 9, two rotation patterns can be spotted, while on the last beat of measure 8, three rotation patterns might prove useful. Despite the grouping here, the best strategy for practicing rotation patterns is to do so separately. The 'Pulling arm legato', the 'Lateral arm motion' and the three primary hand positions are recommended for this passage.



Example 3-6. A. Scriabin, *Etude Op. 42 no.5*, measures 8-9.

Repetition

The repetition is a difficult pattern to master technically. Repetition consisting of single notes is easier than that consisting of octave or chords. For repetition, pianists should familiarize themselves with the 'forward gravity drops-rebounds', 'hand bounce', and 'finger snap' separately for different patterns. Forward gravity drops-rebounds are a basic motion for repetition under slow tempo, and other two are for fast tempos. Phillip Glass's *Etude No. 6* is an

excellent piece for practicing repetitions as it features single-note repetitions, two-octave-as-a-unit repetitions and chord repetitions (example 3-7).

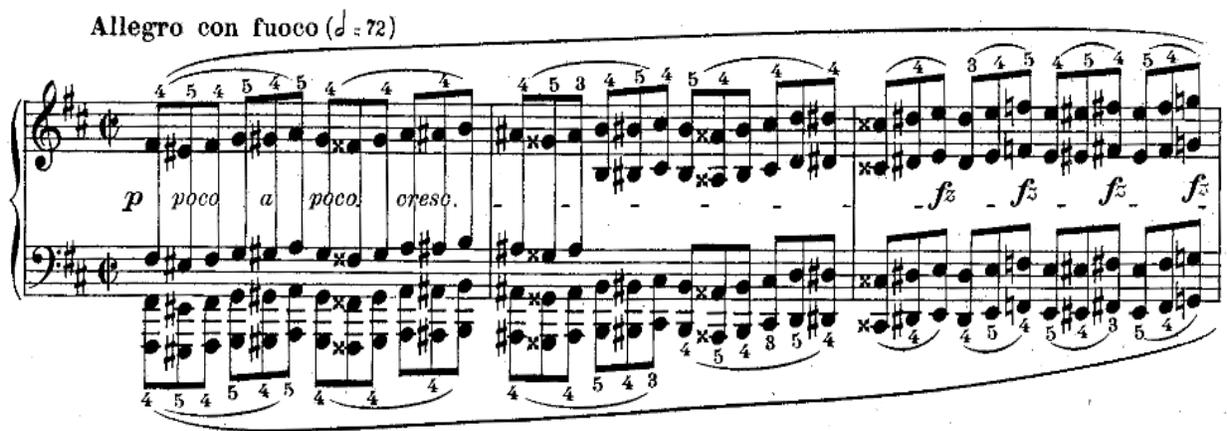
The image displays two systems of musical notation for P. Glass's *Etude No. 6*. The top system shows measures 5-6, featuring a single-note repetition in the right hand, highlighted with a red box. The bottom system shows measures 18-20, featuring octave repetitions in the right hand and chord repetitions in the left hand, both highlighted with red boxes. The score includes a treble and bass clef, a key signature of three flats, and a 7/8 time signature.

Example 3-7. Single-note repetition (top), Octave repetition (bottom left), Chord repetition (bottom right), P. Glass's *Etude No. 6*, measures 5-6 and measures 18-20.

Octave

Octave passages can be characterized as a parallel motion with thumb and fifth finger. Usually, in fast tempo, many pianists play octave passages with thumb and 4-5 fingers. For the fingering with thumb and fifth finger, 'Walking Rebounds-parallel Motion' in Fink's book should provide the most relevant exercise. Unfortunately, Fink does not give an analysis of octave passages with the thumb and 4-5 fingering. Many editors call for the use of the fourth finger when playing black keys in octaves. For example, in Frederic Chopin's *Etude Op. 25 no. 10* (example 3-8), Alfred Cortot marks the fingering with thumb and (3)-4-5. However, when

pianists, especially those with small hands, use the fourth finger in octaves, pain or at least twitching on wrists and forearms might be present. Therefore, pianists should to use a coordinated motion with ‘Pulling Arm Legato’ to avoid the twisting, ‘Pushing Arm Strokes’ to approach black key from white key, ‘Forward Gravity Drops-Rebounds’ to play octave passages quickly by rebounds, and ‘Sidesaddle two-finger rocking’ for 4-5-4 finger-crossing, see figure 3-1.



Example 3-8. Octave passage with thumb and 4-5 fingering, Chopin’s *Etude Op. 25 no.10*, measures 1-3.



Figure 3-1. Sidesaddle two-finger rocking.⁶⁷

⁶⁷ Fink, 134.

Chords

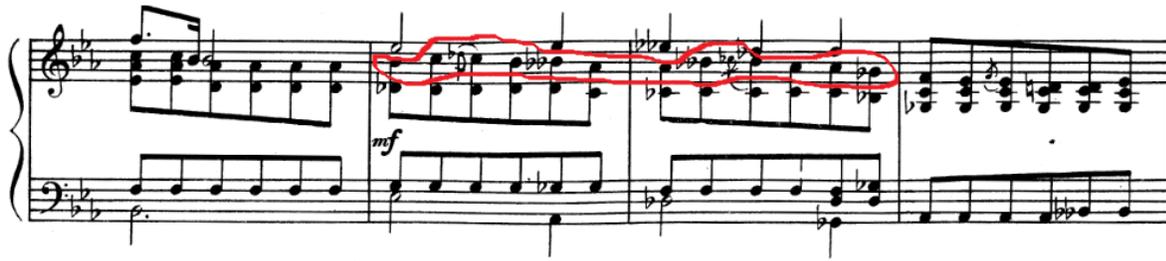
Chord patterns often require a quick change of finger position. In a slow tempo, this is not a huge problem, but in a fast tempo, pianists should be prepared to reach the exact position quickly in order to play the next chord cleanly. For this movement, I suggest practicing the ‘preparation shifts’ (figure 3-2).



Figure 3-2. Preparation shifts.⁶⁸

‘Pushing arm strokes’ and ‘upper-arm gravity drops’ are fundamental elements required to play chord passages, and the ‘small muscle squeezing stroke’ is a good practice for bringing important notes (such as melody line) out (example 3-9). In addition, some chords involve stretched motion between the third finger and the fourth finger or between the fourth and fifth (example 3-10). To counter this problem, practicing the ‘supinated finger stretches’ is recommended.

⁶⁸ Fink, 162.



Example 3-9. Chords with melody line in the inner voices, A. Scriabin's *Etude Op. 2 no.1*, measures 20-23.



Example 3-10. Chord passages requiring stretched fingers, A. Scriabin's *Etude Op. 2 no.1*, measures 15-19.

In chordal passages, pianists generally should bring out the melody line (usually top notes). For this purpose, the Pulling-arm legato and the 'Forearm gravity drop for fifth finger' can work effectively. Forearm gravity drop trains each finger strong enough to generate considerable power without collapsing the fifth finger. In addition, practicing the reverse version of the 'Vertical thumb stroke' (figure 2-13) could also be considered as a good solution to the making of good sound with the fifth finger.

The 'Pushing Arm Stroke-Pushing arm staccato' can produce small, soft and quick sounds. Because of that, the fifth interval from D4 to A-flat4 on the right hand in measure 18 of Scriabin's *Etude Op.2 no.1* can benefit from such motion as an efficient way to control the volume of sound and to make homogeneous articulation. The chord passages as shown in

measure 5 of *Rautavaara's Etude no. 1* requires very big and firm sound (example 3-11). The cooperation of the 'Forearm push stroke', the 'Pushing Arm Cycling', and the 'Upper-arm gravity drop' is needed to make such strong chordal sounds.



Example 3-11. E. Rautavaara's *Etude no. 1*, measures 5-6.

Leap

Leap passages are based on forearm stroke motion and finger stroke motions. To play leaping passages clearly, the 'forearm bounce on palm finger strokes' are recommended. In addition, to prevent the thumb and fifth finger from collapsing, 'collapsing mid-joint' and the 'fifth-finger lateral strength' should be added to the pianist's practicing routine. Passages featuring leaps can be found in works such as Grażyna Bacewicz's *Etude no.3* (example 3-12), and they require exercises that prepare the hand for shifts (figure 3-2, 3-3 and 3-4).



Example 3-12. Leap patterns, G. Bacewicz's *Etude no.3*, measures 11-16

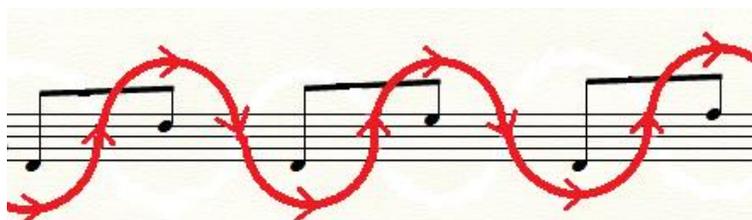


Figure 3-3. Lateral figure-eight exercise pattern.⁶⁹

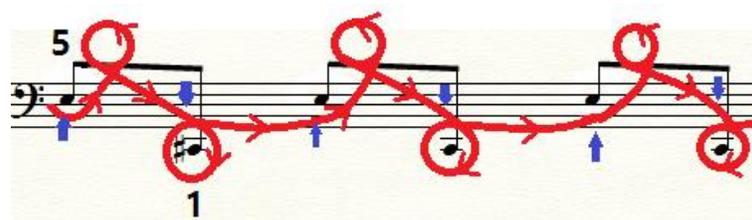
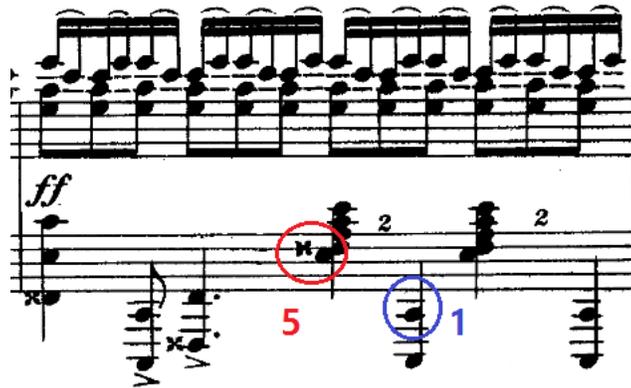


Figure 3-4. Doubly extending lateral exercise pattern (blue arrows: stroke timing).⁷⁰

⁶⁹ Fink, 160.

⁷⁰ Fink, 161.

There are leap patterns with large distance in measure 54-60 in Scriabin's *Etude* op. 42 no.5 (example 3-13). For this situation, the Doubly extending lateral exercise pattern is directly applicable. To do this exercise, one should play only the base note (E3) of the chord with the fifth finger and then aim the thumb at the following c-sharp octave. Doing so improves the accuracy of large distance leaps.

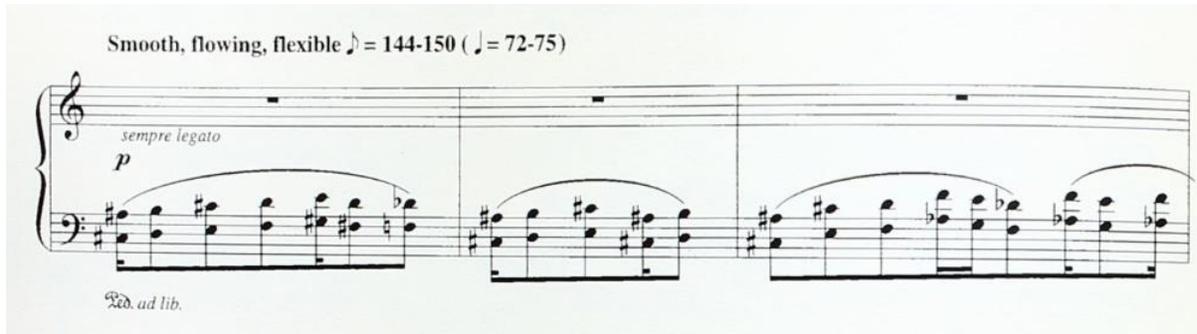


Example 3-13. A. Scriabin's *Etude* Op. 42 no. 5, measure 54.

Interval

There are many interval passages consisting of only two notes with second, third, fourth, fifth, sixth and seventh interval distances, but patterns featuring interval passages with thirds or sixths are frequent. David Rakowski's *Etude no. 39, 'Sixths Appeal'* (Example 3-15) is used as an example here. In some ways, interval passages resemble octave passages, but unlike octave passages, pianists can occasionally use the second fingers instead of the thumb for intervals passages with thirds and sixths. In passages with sixths, it is not easy to use the second finger instead of the thumb, but it is not impossible for pianists who do not have large hands because they do not need to stretch their hands as much. Since pianists with small hands can still use the

fourth finger instead of the fifth, ‘walking rebounds-parallel motion-octaves’ (Figure 3-4) and the ‘sidesaddle two-finger rocking’ are good practice in this regard.



Example 3-15, Sixth interval patterns, D. Rakowski's *Etude no. 39*, measures 1-3.



Figure 3-4. Walking rebounds.⁷¹

⁷¹ S. Fink, 163.

Conclusion

Since people have different strengths and weaknesses in terms of physical technique and the older types of piano technique are not appropriate for many technical problems, many pianists and teachers try to find solutions using various types of techniques. Currently, there are a number of pianists (and piano teachers) who believe in piano methodologies such as the weight technique, muscular pressure technique, and rotation technique. These techniques can be very useful to many people. Since students do not have the same physical characteristics and abilities (some may have very strong muscles, while others may have superior movements in their joints), piano technique cannot be a one-size-fits-all solution. As a consequence, it is more advisable for pianists to spend time to find appropriate techniques for themselves. Likewise, piano teachers also should broaden their views rather than focusing on one or two types of piano techniques and hoping that they can work as a cure-all for their students.

Seymour Fink's book *Mastering Piano Technique* is a wonderful solution for pianists. His suggested exercises which usually incorporate a variety of body movements can turn out to be very useful. Furthermore, his theory can be applied to many technical patterns, and may resolve many problems by tweaking the movements from shoulder to finger. Furthermore, Fink's theory is very down-to-earth and easy to understand. His accompanying videotape carefully demonstrates the motions, exercises and performances discussed in the book. Therefore it is convincing that the book and DVD can help many pianists to tap their potential.

Bibliography

- Anderson, W. R., "Tobias Matthay (1858-1945)", *The Musical Times*, Vol. 87, No. 1235 (Jan. 1946), 9-13.
- Bernson, Gail, Jaqueline Csurgai-Schmitt, William DeVan, Mitchell Elkiss, Seymour Fink, Phyllis Alpert Lehrer, Barbara Lister-Sink, Robert Mayerovitch, Norman Rosen, and Dylan Savage, *A Symposium for Pianists and Teachers: Strategies to Develop the Mind and Body for Optimal Performance*, edited by K. Kropff, Dayton: Heritage Music Press, 2002.
- Ching, James, *Piano Technique: Foundation Principles*, London: Murdoch and Co., 1934.
- Fielden, Thomas, *The Science of Pianoforte Technique*, London: Macmillan and Co., 1927.
- Fink, Seymour, "Technical Objectives in Beginning Piano Study", *American Music Teacher*, Vol. 42, No. 4, (February/March 1993), 28-29, 80-81, 83.
- Fink, Seymour, *Mastering Piano Technique: A Guide for Students, teachers, and Performers*, Portland: Amadeus Press, 1992.
- Gát, József, *The technique of Piano playing*, London-Budapest: Collet's, 1965.
- Gustafson, Amy Elizabeth, "Tone Production on the Piano: The Research of Otto Rudolph Ortmann", DMA diss., The University of Texas at Austin, Accessed October 04, 2017, ProQuest Dissertation publishing (AAT 3274786).
- Levinskaya, Maria, "On Key-Bedding", *The Musical Times*, Vol. 72, No. 1057, (Mar. 1. 1937), 255.
- Lhevinne, Josef, *Basic Principles in Pianoforte Playing*, New York: Dover Publications, 1972.
- Matthay, Tobias, *The Visible and Invisible in Piano Technique*, London: Oxford University Press, 1932.
- Norman, John, *A Historical Study of The Changes in Attitudes Toward The Teaching of Piano Technique From 1800 to The Present Time*, Michigan: Michigan State University, 1969.
- Sándor, György, *On Piano Playing: motion, sound, and expression*, New York-London: Schirmer Books, 2005.
- Schultz, Arnold, *The Riddle of the Pianist's Finger and its relationship to a touch-scheme*, Chicago: The University of Chicago press, 1936.
- Schultz, Arnold, "Physiological Mechanics of Piano Teaching", *American Music Teacher*, Vol. 46 No. 1, (August/September 1996), 32-35.
- Ortmann, Otto, *The Physiological Mechanics of Piano Technique*, New York: DaCapo Press, 1981.

Uszler, Marienne, Stewart Gordon, and Scott McBride Smith, *The Well-Tempered Keyboard Teacher*, New York: Schirmer Books, 2000.

Weyman, Wesley, "The Science of Pianoforte technique", *The Musical Quarterly*, Vol. 4, No. 2, (April 1918), 168-173.

Appendix

Appendix A: A link of video recording by Seonghyang Kim to demonstrate motions in this dissertation:

<https://www.youtube.com/playlist?list=PLBLmmyxrWOjLjdKpaozNRJ2J0wdtw58N->