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Despite an increasing awareness among pianists, the problem of playing-related injuries has remained common. In spite of the abundance of seminars and workshops on healthful piano technique, very few methods or systems of teaching injury-preventive technique are available today. The Lister-Sink Method is a highly effective system to learn injury-preventive piano technique, based on both biomechanical principles of the human body and the mechanism of the piano action. Its core principle lies in the efficiency of tone production, and its effectiveness is founded on a step by step neuroprogramming of each component at each level to insure the foundation of good coordination. Kinesthetic awareness, mind-body connection, and active listening establish an integrated coordination among the mind, the body, and the instrument.

After a review of existing literature on injury-preventive technique, including an explanation of the many causes of pianists' injuries, this document identifies the Lister-Sink Method as one of the few methods to successfully teach well-coordinated technique. The fundamental pedagogical approach of the Method is explained, body use patterns and playing mechanisms as defined in the Method are presented, and the fundamental element of the Method, the "Basic Stroke," is described. Applications of the "Basic Stroke" in the training process and in the study of selected piano literature are covered with reference to numerous musical examples.

THE LISTER-SINK METHOD: A HOLISTIC APPROACH  
TO INJURY-PREVENTIVE PIANO TECHNIQUE

by

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## APPROVAL PAGE

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## TABLE OF CONTENTS

	Page
LIST OF FIGURES.....	v
CHAPTER	
I. INTRODUCTION.....	1
II. THE ISSUE OF PIANISTS’ INJURIES.....	3
The Prevalence of Injuries Among Pianists.....	3
The Importance of Injury Prevention and Retraining.....	5
III. STATUS OF RESEARCH IN THE GENERAL SUBJECT AREA.....	7
Books.....	7
Journals.....	10
Videos.....	11
Websites.....	12
IV. FACTORS RELATING TO PIANISTS’ INJURIES.....	14
Treating Technique as “Talent”.....	14
Overemphasis on Finger Execution.....	16
Other Factors that Can Contribute to Injury.....	20
V. THE LISTER-SINK METHOD.....	27
Barbara Lister-Sink: Biography.....	27
Introduction to the Lister-Sink Method.....	30
VI. BODY USE PATTERNS THAT CAN LEAD TO INJURY.....	39
Overall.....	40
Shoulders and Arms.....	41
Wrists, Hands, and Fingers.....	41
VII. BASIC KNOWLEDGE OF THE PLAYING MECHANISMS.....	43
The Mechanism of the Piano Hammer Action .....	43
The Human Body Mechanism.....	45

VIII. THE BASIC PRINCIPLE OF TONE PRODUCTION: “THE BASIC STROKE” .....	50
First Stage of Training: Cultivating Kinesthetic Awareness and Appropriate Musculoskeletal Use of the Whole Body.....	50
Second Stage of Training the “Basic Stroke,” or Fundamental Sensations and Coordinations of Sound Production.....	52
Examples of Exercises and Studies used in the Initial Stages.....	58
Programming the “Basic Stroke” into Increasingly Complex Movement Patterns.....	63
IX. MUSICAL EXAMPLES.....	72
Repertoire in the Beginning Stage of Training/Retraining.....	72
Application to More Advanced Repertoire.....	78
X. CONCLUSION.....	87
BIBLIOGRAPHY.....	88

## LIST OF FIGURES

	Page
Figure 1: One Note per Basic Stroke using the middle finger.....	59
Figure 2: One Note per Basic Stroke using all five fingers.....	60
Figure 3: One Note per Basic Stroke – Intervals. ....	61
Figure 4: One Note per Basic Stroke – Broken Triads.....	62
Figure 5: Linking Exercises – Scales.....	64
Figure 6: Linking Exercises – Arpeggios.....	65
Figure 7: Two Notes per Basic Stroke.....	67
Figure 8: Three Notes per Basic Stroke.....	68
Figure 9: Four Notes per Basic Stroke.....	68
Figure 10: Five Notes per Basic Stroke.....	69
Figure 11: Arvo Pärt, <i>Für Alina</i> , mm. 1-5.....	73
Figure 12: Robert Schumann, “Ein Choral,” from <i>Album für die Jugend</i> , Op. 68, mm. 1-8.....	74
Figure 13: Edward MacDowell, “To A Wild Rose,” from <i>Woodland Sketches</i> , Op. 51, mm. 1-4. ....	75
Figure 14: Robert Schumann, “Kleine Studie,” from <i>Album für die Jugend</i> , Op. 68, mm. 1-4.....	76
Figure 15: Johann Burgmüller, “Sincerity,” from <i>25 Progressive Pieces</i> , Op. 100, mm. 1-4.....	76
Figure 16: Dmitri Kabalevsky, “A Little Joke,” from <i>30 Children’s Pieces</i> , Op. 27, mm. 1-4 .....	77

Figure 17: J. S. Bach, Prelude in C Major, from <i>The Well-Tempered Clavier, Book 1</i> , mm. 1-2.....	78
Figure 18: W. A. Mozart, <i>Piano Sonata in F Major</i> , K. 533/494, First Movement, mm. 1-8.....	80
Figure 19: W. A. Mozart, <i>Piano Sonata in F Major</i> , K.533/494, Third Movement, mm.1-6 .....	81
Figure 20: Frédéric Chopin, <i>Mazurka</i> in F Minor, Op. 63, No. 2, mm. 1-8.....	82
Figure 21: Frédéric Chopin, <i>Mazurka</i> in B minor, Op. 33, No.4, mm. 1-4.....	83
Figure 22: Claude Debussy, “Reflets dans l’eau,” from <i>Images, Book 1</i> , mm. 1-2 .....	84
Figure 23: Claude Debussy, “Reflets dans l’eau,” from <i>Images, Book 1</i> , mm. 22-23.....	85
Figure 24: Claude Debussy, “Reflets dans l’eau,” from <i>Images, Book 1</i> , mm. 25-26 .....	85

## CHAPTER I

### INTRODUCTION

This study of injury-preventive piano technique was inspired by the video/DVD, *Freeing the Caged Bird: Developing Well-Coordinated, Injury-Preventive Piano Technique* by Barbara Lister-Sink. Like many pianists, including Lister-Sink, the present author suffered a playing-related injury for many years. Realizing that the root cause lay in inefficient technique, the author researched the literature on piano technique. The written materials consulted seldom challenged the transfer of essential concepts from the written word into actual physical coordination, and confusion also arose from a variety of contradictory and misleading information on piano technique. Although no clear concept of healthful piano technique was explained clearly in the literature consulted, such a concept was presented in the video by Lister-Sink. This video, however, had its own limitations in that it provided only the visual image of a healthful technique, but not instruction on acquiring it.

Learning any complex physical coordination requires a direct, hands-on pedagogical experience of the approach. Indeed, Lister-Sink warns that her video should serve only as an introduction to principles of good coordination at the piano and to her method, and should not be used as an instructional tool. The actual training or retraining should be done carefully through direct, hands-on instruction. Tobias Matthay, a leader in injury-preventive piano technique in the early twentieth century, described this necessity



of direct guidance in the preface of his book, *The Visible and Invisible in Pianoforte Technique*: “Our business as teachers is to make clear to the learner which are the limb stresses (both visible and invisible) needed in playing, and which are the ones to be avoided. It is the only way by which the learner can be directly helped.”<sup>1</sup>

During retraining with Lister-Sink for two years, the author was able to recover from injury and play the piano again. She found the systematic approach of the Lister-Sink Method effective in healing and alleviating pain, as well as improving tone quality, and enhancing facility, speed, ease of movement, tonal power, timing, and listening acuity. As a result, the author became more fully available for music-making without physical impediments.

This dissertation explains the seriousness, causes, and effects of pianists’ playing injuries and analyzes the available literature addressing the problem with special attention to the Lister-Sink Method. Using selected works that present a variety of technical problems, the author demonstrates how to apply the principal concept of the Lister-Sink Method to achieve aesthetically satisfying and non-injurious piano performances.

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<sup>1</sup> Tobias Matthay, *The Visible and Invisible in Pianoforte Technique* (New York: Oxford University Press, 1947), ix.

## CHAPTER II

### THE ISSUE OF PIANISTS' INJURIES

#### **The Prevalence of Injuries Among Pianists**

In 2005, a team of researchers conducted an exhaustive analysis of studies on the prevalence of and risk factors associated with playing-related musculoskeletal disorders among pianists. They found significantly varied incidence rates from 26 to 93 percent and insufficient information regarding the correlations between injury and piano-specific movements. The team identified a number of limitations with these studies that affected their outcomes. In addition to the problems with the studies, other factors affect the reported cases of playing-related injuries.<sup>2</sup>

One of the challenges of documenting playing-related injuries is the definition of “injury.” *Webster’s Medical Desk Dictionary* defines injury as “hurt, damage, or loss sustained.”<sup>3</sup> A key issue with this definition is that many pianists believe that pain is simply a part of being a pianist. Thomas Mark explains this issue with the following example: “a well-known teacher reportedly told an audience that ‘Pain is the price you pay for being a concert artist.’ But that is false.”<sup>4</sup> If pianists believe that pain is inevitable,

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<sup>2</sup> Peter Bragge, Andrea Bialocerkowski, and Joan McMeeken. “A Systematic Review of Prevalence and Risk Factors Associated with Playing-Related Musculoskeletal Disorders in Pianists Disorders in Pianists.” 2005.  
<http://occmed.oxfordjournals.org/cgi/reprint/kqi177v1> (accessed 14 July, 2009).

<sup>3</sup> Roger W. Pease, Jr., ed., *Webster’s Medical Desk Dictionary*. (Springfield, MA: Merriam-Webster, 1986), 338.

<sup>4</sup> Thomas Mark, *What Every Pianist Needs to Know About the Body* (Chicago: GIA Publications, 2003), 1.

they might not consider their pain an “injury,” and therefore would not report it to researchers. Moreover, pianists are often unaware when their pain becomes an injury and continue to play until it is so severe they can no longer play.

Norman Rosen, M.D. discusses the development of injury in his article, “Overuse, Pain, Rest, and the Pianist,” saying that “true ‘injuries’ occur only if pianists ignore their pain and fail to get prompt, appropriate medical and pianistic advice to correct the various factors that led to development of the problem in the first place.”<sup>5</sup> The “no pain, no gain” philosophy so common in society likely leads pianists to try to ignore their pain. Thomas Mark mentions this “sports analogy” factor as a major obstacle in understanding injury among pianists.<sup>6</sup> Taubman looks at this phenomenon in the addenda to her video/DVD series, *The Taubman Techniques* (1995), saying that “too many piano students [are] playing with pain.” Taubman explains that the public response to her statement was indignation and denial.<sup>7</sup> As a result of this misunderstanding among pianists, injuries go unreported, which greatly skews statistics regarding the prevalence of injury. Additionally, the stigma of being “injured” and the fear of losing their careers also contributes to unreported cases of injuries.

Injuries among pianists, then, are likely far more prevalent than we realize or that studies reflect. The number of specialized clinics treating injured musicians around the

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<sup>5</sup> Norman B. Rosen, *Overuse, Pain, Rest, and the Pianist*. ed. Kris Kropff, “*A Symposium for Pianists and Teachers*” (Dayton: Heritage Music Press, 2002), 157.

<sup>6</sup> Thomas Mark. “Piano Map/Pianists’ Injuries/Two Obstacles to Understanding.” <http://www.pianomap.com/injuries/obstacles.html> (accessed July 14, 2009).

<sup>7</sup> Dorothy Taubman, “Addenda to the Cassettes on the Taubman Techniques.” Edited by Shirley Schnitzer. from *The Taubman Techniques* (Medusa, NY: The Taubman Institute of Piano, 1995), 3.

globe indicates a high frequency of injury cases. Even with the most conservative estimates available, statistics show that the majority of pianists experience an injury at some point in their playing careers. A look at professional pianists who suffered injuries helps illustrate this prevalence. Thomas Mark lists renowned concert pianists such as “Gary Graffman, Leon Fleisher, Wanda Landowska, Artur Schnabel, Alexander Scriabin, Ignaz Friedman, Sergei Rachmaninoff, Clara Schumann, Glenn Gould, Michel Beroff, Richard Goode and many others.”<sup>8</sup> The fact that professional pianists, and even some of the greatest pianists, are not completely immune to playing-related injuries suggests a higher incidence of injuries among all pianists including teachers and students.

### **The Importance of Injury Prevention and Retraining**

Despite an increasing interest in and awareness of musicians’ injuries in the medical field, injury prevention is not often addressed by the medical profession. Doctors prescribe pain medication and instruct the patient to rest and discontinue playing the instrument until the pain subsides. This treatment is not only impractical to pianists who have performance obligations, but it can also be psychologically threatening to injured pianists. With no successful treatment, many pianists cycle through periods of rest and re-injury. If a pianist’s injury is left untreated, its severity increases over time, and in the worst case, the injury may become permanent. Correcting the unhealthful technique and learning efficient body use at the keyboard is the only way to cure playing-related injury. Thomas Mark makes an important point that many pains and injuries of daily life as well

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<sup>8</sup> Thomas Mark, “Pianists’ Injuries: Movement Retraining is the Key to Recovery.” 2001. <http://eeshop.unl.edu/taxonomy/term/11> (accessed 14 July, 2009).

as pain related to piano playing are often caused by habits in how a person uses the body, so these physical problems usually do not respond to conventional treatments. The only cure can be achieved through reeducating the body to learn healthful movements.<sup>9</sup> Other possible causes such as ergonomic problems must also be addressed. Although there is much demand for injury-prevention methods, very few are readily available today; the Taubman Technique and the Lister-Sink Method are two of the few internationally recognized ones.

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<sup>9</sup>Mark, 4.

### CHAPTER III

#### STATUS OF RESEARCH IN THE GENERAL SUBJECT AREA

Authors in many of the books and articles from the late nineteenth century, and even the twentieth century, point out the ineffectiveness of the outdated, potentially injurious pedagogical ideas and traditional, isolated finger exercises. The importance of breathing, relaxation, posture, economical use of the muscles, and the coordination of the playing apparatus are discussed in much of the modern literature.

#### **Books**

Literature on piano technique by itself provides little help in remedying the injury since they offer some ideas about technique, but it is difficult to apply them to actual playing. While many book sources encourage elements of piano technique that they share with the Lister-Sink Method, many of them contain contradictory and misleading ideas accompanied by remnants of the traditional finger technique from the early nineteenth century. For example, Alan Fraser advocates some needed and effective methods promoting overall physical well-being, such as the Alexander Technique, Feldenkrais Method, and T'ai Chi Chuan, but he also shows exercises for finger individualization and strengthening, such as thumb pushups<sup>10</sup> and other exercises that involve holding hands and fingers in physically challenging positions.<sup>11</sup> Similarly problematical, Charles Rosen

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<sup>10</sup> Alan Fraser, *The Craft of Piano Playing: A New Approach to Piano Technique* (Lanham, MD: The Scarecrow Press, Inc., 2003), 76-80.

<sup>11</sup> *Ibid.*, 142-144.

states from his personal experience that muscular tension caused by emotional excitement is appropriate for emotional expression and creates a sense of connection to the instrument: “I find it more satisfying to have the experience of playing reflect that emotional tension in the extra physical tension of the hand.”<sup>12</sup>

Several other authors hold some ideas in common with Lister-Sink. For example, Madeline Bruser, the author of *The Art of Practicing: A Guide to Making Music from the Heart*, calls attention to the fact that *listening* is fundamental, and yet the most forgotten element of music making. Attentive listening to one’s own playing ensures responsiveness to actual sound, thus enabling the pianist to hear whether the musical phrase has the desired musical effects. It also enables us to experience full-bodied engagement with music.

The interaction of body and mind also plays a key role in achieving a healthful technique that can serve as a vehicle for musical expression. Bruser emphasizes self-trust as a means to release unnecessary tension in the body, enhancing our responsiveness to sound.<sup>13</sup> Another author, Louis Kentner, also advocates the same principles as Lister-Sink in regard to a healthful, music-serving piano technique: the importance of breathing, a feeling of ease, such rarely discussed aspects as a focus on the internal sensations of the body rather than visible movements, and the coordination of the whole body, including the back and legs. Like Lister-Sink, he considers the act of touch an often misunderstood part of the integrative action. Kentner explains that the aim is to affect the strings and not

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<sup>12</sup> Charles Rosen, *Piano Notes: The World of the Pianist* (New York: The Free Press, 2002), 23-24.

<sup>13</sup> Madeline Bruser, *The Art of Practicing: A Guide to Making Music from the Heart* (New York: Random House, 1997), 12, 18.

the key, which is simply a tool and a continuation of one's finger.<sup>14</sup>

Literature on general body-mind awareness provides further valuable resources since holistic personal well-being is essential to healthful music making. *A Symposium for Pianists and Teachers: Strategies to Develop Mind and Body for Optimal Performance*<sup>15</sup> is a collection of various perspectives on the specifics of healthful piano technique and movement by ten prominent figures in piano pedagogy (two are well-known medical experts). The contributors are Gail Berenson, Jacqueline Csurgai-Schmitt, William DeVan, Dr. Mitchell Elkiss, Seymour Fink, Phyllis Alpert Lehrer, Barbara Lister-Sink, Robert Mayerovitch, Dr. Norman Rosen, and Dylan Savage. The editor, Kris Kropff, comments in the preface that the fact these pedagogues have differing opinions and disagreements gives this book its greatest strength; rather than having a “this is the only way” approach, a diversity of opinions and approaches seems appropriate to the multifaceted needs of pianists at the instrument. The conciseness and practicality of the contents make this book accessible to most readers. It is clearly organized into five sections – “The Mechanical,” “The Technical,” “The Musical,” “The Healthful (Mind and Body)” and “The Pedagogical.” Important subjects discussed include medical views on pianists’ injuries and their diagnosis and treatment, the benefits of physical fitness, various exercises that are done away from the instrument, the biomechanics of pianistic movements, the mechanics of the piano, and the physiology pertaining to pianists. Despite their different approaches to healthful piano technique, these authors all seem to

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<sup>14</sup> Louis Kentner, *Yehudi Menuhin Music Guides: Piano* (New York: Schirmer Books, 1976), 47-68.

<sup>15</sup> Kris Kropff, ed., *A Symposium for Pianists and Teacher: Strategies to Develop the Mind and Body for Optimal Performance* (Dayton, OH: Heritage Music Press, 2002).



share an understanding of the basic principles of natural and efficient body use.

Thomas Mark's *What Every Pianist Needs to Know About the Body* is one of the most valuable resources available related to the topic of body awareness. Mark presents simple and practical information on human anatomy and exercises to cultivate "Body Mapping," an awareness of the body and its movement. He defines the "body map" as the brain's representation of the body, which determines the movement. An incorrect body map leads to movement inconsistent with the actual structure of the body, thus the movement becomes tense and awkward. Mark describes the process of "Body Mapping" and provides exercises to refine kinesthetic awareness.<sup>16</sup>

### **Journals**

Although journals can provide information on the subject of pianists' injuries, they are very limited in offering actual help in remedying such injuries. Medical journals such as *Medical Problems of Performing Artists* contain studies of injured musicians and provide statistics on the prevalence of injuries among musicians, a subject which has raised interest in the medical field. The studies offer limited information on the treatment itself and the procedures described tend to be oversimplified, neglecting many other variant factors which can affect the results. The results of the studies do not reflect the long-term consequences of injury since the investigators often do not follow up with the subjects. Many musicians suffer recurring pain until they correct physical habits and incorrect coordination that contributed to the injury. Music journals such as *Clavier Companion* and *International Piano* offer some basic information on healthful technique,

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<sup>16</sup>Mark, 10-12.

which can serve as an introduction to the subject and as a means to raising awareness in the field of music teaching. They also carry advertisements for and directories of various summer programs and workshops that offer retraining and the study of injury-preventive piano technique.

### **Videos**

Founder and director of the Taubman Institute, Dorothy Taubman, has raised awareness of injury-prevention and developed a system of teaching an efficient piano technique. The Taubman Technique is considered a pioneering method in injury-preventive piano technique in the twentieth century. Available for purchase is a ten-part video series consisting of twenty hours of lectures presented by Taubman's assistant, Edna Golandsky, plus commentary and masterclasses by Taubman. The visual aspect of their explanation of technique seems very practical and useful. Efficient technique is explained from an anatomical point of view, such as keeping a natural hand position, avoidance of hand stretching and twisting, finger isolation, etc. The concept of forearm rotation supporting the fingers, which is vague in much literature, is explained well, and exercises for learning the concept are shown. The organization of the tapes/DVDs could be more concise and more demonstration could be useful. The Taubman approach in these videos focus primarily on the playing apparatus, the fingers and arms, and does not incorporate the rest of the body.<sup>17</sup> Presently, the Golandsky Institute, headed by Edna

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<sup>17</sup> Dorothy Taubman, *The Taubman Techniques* (Medusa, NY: The Taubman Institute of Piano, 1995). Ten video cassettes/DVDs.

Golandsky, also offers a series of DVDs on the Taubman Technique, available at her website.<sup>18</sup>

## Websites

Many websites include information on the subject of injury-preventive piano technique, ranging from the informative and credible, to the confusing and poorly written. The useful ones offer bibliographical information and links to other related sites, medical organizations, alternative treatments, teachers and retraining programs.

Sheila Paige, a former faculty member of the Taubman Institute and the Taubman Seminar, maintains a website, Piano Wellness Seminar.<sup>19</sup> She gives lectures, lessons, master classes, workshops, and Keyboard Wellness Seminar around the country. She has a list of contact information on Keyboard Wellness faculty who has been trained by Paige.

The author of the book, *What Every Pianist Needs to Know About the Body*,<sup>20</sup> Thomas Mark, offers a useful website, Piano Map: A Resource for Pianists,<sup>21</sup> which contains information on playing-related injury, scientific explanation of the causes of playing injury, a listing of movement therapists, and a list of other resources and links. He also offers private lessons. Mark advocates Alexander Technique, Body Mapping, the

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<sup>18</sup> Edna Golandsky. "The Golandsky Institute" 2008.  
<http://www.golandskyinstitute.org/dvd3.html> (accessed 10 July 2009).

<sup>19</sup> Sheila Paige. "Keyboard Wellness Seminar." 2006.  
<http://www.pianowellnessseminar.com> (accessed 28 June 2009).

<sup>20</sup> Thomas Mark, *What Every Pianist Needs to Know About the Body* (Chicago, IL: GIA Publications, 2004).

<sup>21</sup> Ibid., "Piano Map: A Resource for Pianists." <http://www.pianomap.com> (accessed 28 June 2009).

Taubman Technique, and the Keyboard Wellness Seminar directed by Sheila Paige.

Another website with a holistic approach, The Well-Balanced Pianist: The Integrated Approach,<sup>22</sup> is maintained by Teresa Dybvig who was also trained in the Taubman approach. Dybvig teaches programs which contain lessons, clinics on the Taubman Technique as well as yoga and Alexander Technique. Her website also contains an online forum to discuss injury prevention and wellness pertaining to piano playing. Dybvig also provides a useful guide for sitting at the piano with photos showing different body sizes and types: a man, two women and a small child. She recommends placing a cushion or a mat on the bench (for the non-adjustable one) as well as a mat or a small stool on the floor to accommodate pianists with shorter legs.

Chiropractic Performing Arts Network also hosts a website, Musician's Health.<sup>23</sup> It offers information and photographs of finger stretching exercises which seem to force the fingers into unnaturally extreme positions. It also promotes chiropractic practices, books for sale, and a finger-weights device for finger strengthening that has no scientific proof for its efficacy.

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<sup>22</sup> Theresa Dybvig. "Well-Balanced Pianist." 2009.  
<http://www.wellbalancedpianist.com> (accessed 28 June 2009).

<sup>23</sup> Timothy Jameson, "Musician's Health." 2004. <http://www.musicianshealth.com> (accessed 28 April 2009)

## CHAPTER IV

### FACTORS RELATING TO PIANISTS' INJURIES

#### **Treating Technique as “Talent”**

The term “technique” is ambiguous. According to *The Oxford Dictionary and Thesaurus*,<sup>24</sup> technique is, “(1) a mechanical skill; applicable method and (2) manner of artistic execution in music, painting, etc.” The synonyms are “craftsmanship, artistry, craft, knack, talent, gift, expertise; approach, mode, style, procedure.” According to another definition from *The American Heritage Dictionary*,<sup>25</sup> technique is “(1) the systematic procedure by which a complex or scientific task is accomplished and (2) the degree of skill shown in any performance.”

To many pianists, piano technique is thought to be a mysterious gift bestowed on only a few talented people. In his book, *Famous Pianists and Their Technique*,<sup>26</sup> Reginald Gerig explains why it has been challenging to master and teach efficient technique, and why inefficient technique has been perpetuated throughout the course of piano history. He adds that many great pianists have been unable to explain how they acquired their skills, and likewise, observers cannot understand and articulate how piano technique is mastered. Without this basic understanding of their inherent natural technique, others

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<sup>24</sup> Elizabeth J. Jewell, ed., *The Oxford Desk Dictionary and Thesaurus*, 2<sup>nd</sup> ed. (New York: Oxford University Press, 2002), 860.

<sup>25</sup> Bantam Dell, *The American Heritage Dictionary*, 4<sup>th</sup> ed. (New York: A Dell Book, 2001), 841.

<sup>26</sup> Reginald R. Gerig, *Famous Pianists & Their Technique* (New York: Robert B. Luce, Inc., 1974), 3-4.

without this ability have struggled to explain and teach this superior skill and artistry. Similarly, even the best teachers may have difficulty teaching technique to their students. Great master teachers such as Mozart, Beethoven, Chopin and Liszt found their skills through their intuition and experience, and thus their teachings were based on their own understanding of technique which was not always understood by everyone. Gerig further explains that many modern great pianists/teachers, including Rosina and Joseph Lhevinne, Artur Schnabel, and Vladimir Horowitz, based their teaching on their own subjective ideas of technique. These great pianists and many others believe that technique is found naturally through musical intuition and experimentation. In the end, in the absence of detailed explanations, what is taught is based merely on pseudo-science, subjective ideas about playing, and technique that is not sufficiently grounded in biomechanics.

It is relevant to note that the Oxford Dictionary gives the words “talent” and “gift” as synonyms for the term “technique.” This notion reinforces a strong stigma being attached to performance-related injuries, causing many injured pianists to hide their injuries because admitting their existence might indicate a lack of talent. Pianists, teachers, and students often minimize the prevalence of injuries, or simply pretend that those injuries are temporary and not serious. Yet injury can affect even the most gifted pianists. Among the famous pianists who suffered a playing-related injury are Robert Schumann, Leon Fleisher, Gary Graffman, to name a few.

Tobias Matthay clarifies the idea that technique is a gift in his preface to *The Act of Touch*. He states that the foundation of playing the piano lies in the art of tone

production, and it “can no more be a ‘gift’ (as so often supposed) than is the art of articulate speech itself; for it can be acquired by every person of average intelligence.”<sup>27</sup> Similarly, in her DVD, Lister-Sink clearly shares this belief with Matthay when she explains that “well-coordinated technique is a skill, not a talent, and it should be taught to every pianist.” This misunderstanding that playing is a skill is a primary cause of why so many pianists suffer in pain, believing that they are simply not “talented.”

### **Overemphasis on Finger Execution**

Another factor relating to playing-related injury is an overemphasis on using mainly the fingers in playing, rather than incorporating a whole-body approach. In the art of playing the piano, the term technique generally refers to the ability of the fingers to play the notes accurately and is thus often based primarily upon what we play rather than how we coordinate the body. Many pianists are taught a traditional approach which focuses on strengthening and individualization of the fingers, if a technical approach is taught at all. The function of the arms and the rest of the body are often disregarded. This lack of full body integration manifests itself in the common misconceptions that pianists mainly use their fingers and hands for performance. Superficially, these assumptions seem reasonable since only the fingers have direct contact with the instrument. The relative visibility of the finger action, in comparison with the more subtle movements of full-body biomechanics, probably contributes to this belief.

Reginald Gerig explains a possible source for the continuation of the “finger

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<sup>27</sup> Tobias Matthay, *The Act of Touch in All Its Diversity: An Analysis and Synthesis of Pianoforte Tone Production* (New York: Longmans, Green & Co., 1905), vii.

school” of playing, despite its inherent physical limitations. In the early eighteenth century, the technique used to play harpsichords and early pianos required well-articulated finger action with a minimal use of the arms and rest of the body. Author Betah Reeder explains why an emphasis on finger motion was well suited for these early instruments, saying that “notes could not be varied by touch nor could they be repeated without letting the key rise completely.” Further, “precision in key movement was of greater importance than a sensitive control of force.” The more active involvement of the fingers provided this type of “crisp and precise” action.<sup>28</sup>

As the piano gradually gained dominance over the harpsichord during the late eighteenth century, it expanded its size, key weight, and tonal power to meet the demands of a new style of music written expressly for the piano. Great pianists of this time such as Beethoven, Chopin, Liszt, Mendelssohn, and Clara Schumann naturally adapted their technique to play the newer pianos. However, many descendants of the finger school of the Baroque and early Classical periods were reluctant to accept this new technique, despite its importance for the demands of the new instrument. During this period, the technical systems of Hummel, Kalkbrenner, and Czerny to develop high finger action were widely propagated.<sup>29</sup> The system of teaching the finger technique was developed at the Stuttgart School founded by Sigismund Lebert (1821-1884) and Ludwig Stark (1831-1884) in the mid-1850s, and it became popular throughout Europe and the United States. The Stuttgart method focused on finger strengthening by having the students learn a new

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<sup>28</sup> Betah Reeder, *The Singing Touch* (New York: Galaxy Music Corporation, 1943), 56-57.

<sup>29</sup> Gerig, 229.



piece slowly and forte throughout the piece with high fingers, while holding the arms and wrists completely still. James Parakilas and many other experts claim this method has proved to be ineffective and injurious in playing the heavier action of the modern piano, despite its popularity.<sup>30</sup>

Preoccupation with the finger technique is manifested in the invention of mechanical devices in the nineteenth century intended to strengthen the finger muscles and to aid finger independence. John Bernard Logier (1777-1846) invented a device called the *Chiroplast* (1814) to keep the wrists at a certain position. An enthusiast of the *Chiroplast*, Friedrich Kalkbrenner (1785-1849), invented a similar device, the *Hand-guide*. A finger strengthening device, the *Digitorium*, a six-inch square box with five keys regulated by strong springs, was invented by a piano maker, Myer Marks (1832-1892). An American invention, the *Technician* by J. Brotherhood, was modeled after the *Digitorium*, and also had a feature to strengthen finger lifting. Silent keyboards were also used by many pianists.<sup>31</sup> Finger-strengthening gloves with weights in each fingertip were created during this time, and a modern version, with weights strapped around each finger, are being sold even in the twenty-first century. The *Fingerweights: A revolutionary exercise system for musicians and computer users* are recommended by a chiropractor Dr. Timothy Jameson's and sold at his website. Dr. Jameson claims that the *Fingerweights* target extensor and flexor muscles, and thus help musicians develop speed, dexterity, endurance, and control.<sup>32</sup>

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<sup>30</sup> James Parakilas, et al., *Piano Roles: A New History of the Piano* (New Haven, CT: Yale University Press, 2002), 130.

<sup>31</sup> Gerig, 130, 233.

<sup>32</sup> Jameson, "Fingerweights" 2004. <http://musicianshealth.com/fingerweights.htm>

Exercises for strengthening fingers, such as *Gymnastics for the Fingers and Wrist* (1865) by E. Ward Jackson, also gained popularity in the nineteenth century through the late twentieth century,<sup>33</sup> and it is available even today at online book stores ([www.amazon.com](http://www.amazon.com) and [www.barnesandnoble.com](http://www.barnesandnoble.com)) and other online stores. Developing equal strength in all fingers was propagated through exercises by Charles Hanon (1820-1900), Johann Baptist Cramer (1771-1858), and Carl Czerny (1791-1857). These exercises are still used widely around the globe today.

In conjunction with accuracy of finger execution, technique implies both muscular strength and physical stamina in the playing apparatus. Virtuosity is thought to require the presence of athletic or acrobatic elements and certain physical attributes like large hands and long fingers. Pianists play long recitals of challenging pieces and competitions require extensive repertoire, often including an entire concerto. This notion came from the virtuosos in the nineteenth and twentieth centuries. For instance, the nineteenth-century virtuosos Franz Liszt and his rival Sigismond Thalberg possessed extraordinary virtuosity, power and stamina, and they effectively combined their skills with showmanship to promote themselves. Liszt would have multiple pianos on stage since he often broke strings and hammers during his performance.<sup>34</sup>

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(accessed 13 July 2009).

<sup>33</sup> Ibid., 233.

<sup>34</sup> Harold C. Schonberg, *The Great Pianists from Mozart to the Present*. (New York: Simon & Schuster, 1987), 162-163.

## **Other Factors that Can Contribute to Injury**

The causes of pianist's injury are often multifaceted and may involve other areas besides the coordination of the body.

### *Behavioral Factors*

- Practicing without adequate warm-ups before and cool-downs after practice
- Practicing long hours without taking adequate breaks during practice
- Practicing when the body or the mind is tired
- Practicing late at night when the body requires rest
- Playing loud with extra force in order to develop finger strength
- Sight-reading difficult pieces leading to buildup of muscular tension
- Overexertion: motivated by a sense of inadequate preparation time before a performance, many pianists practice hours intensively with very little break, forcing the muscles to overwork. Accompanists who spend many hours at the piano daily also risk overexertion.
- Lack of proper or sufficient use of the damper pedal: trying to play legato, to connect notes with fingers alone.

### *Psychological Factors*

Although psychological factors are often overlooked, emotional tension can certainly manifest itself as physical tension. A busy modern lifestyle often causes stress,

leading to accumulation of muscle tension and making the body prone to injury. Another factor is performance deadlines. Pianists may feel much stress from being under-prepared. Additionally, performing a piece of music from memory imposes an enormous amount of mental and psychological pressure on any pianist; many solo pianists complain about the stress of performing without the score. Stage fright is the most common cause of muscular tension both during practice and on stage. Collaborative pianists who must learn many pieces in a short time may not have the luxury of studying the score thoroughly. Committed pianists who tend to push their physical limits are much more prone to injury.

Furthermore, sensitive pianists who feel the musical experience intensely may develop a habit of contracting the muscles excessively. Certain repertoire that a pianist may not identify with emotionally or intellectually can also create stress. The emotions of anger, fear and anxiety induce muscle tension, and practicing in those emotional states can be detrimental. Lack of motivation can induce boredom, leading to mechanical practicing, and frequently, accumulation of muscle tension. A negative attitude towards the piano and/or music is certain to create muscular tension during practicing. Negative emotions caused by non-musical factors such as family problems, can cause generalized stress/anxiety and contribute to accumulation of muscular tension.

### *Physical Fitness*

Playing the piano involves the whole body, which must be kept in optimal condition if it is to coordinate highly complex physical skills with mental acuity. General

health is negatively affected by inadequate nutrition, insufficient sleep, and a lack or a shortage of general exercise. These factors can impair both physical and mental performance. Illnesses, poor general health, and non-playing-related injuries can also cause skeletal misalignment, poor coordination, and excessive muscle tension.

### *Medical Conditions*

Non-playing-related illnesses and medical conditions are often overlooked contributors to pain and injury of pianists. The most common conditions include arthritis, spinal disc problems, neuritis, bursitis, and entrapment neuropathies (pinched nerve). In *A Symposium for Pianists and Teachers*, Norman B. Rosen (M.D.) discusses a common condition called myofascial pain syndrome, which is often overlooked even by physicians and clinicians. Myofascial dysfunctions result from the disruptions in the balance of the muscular system, caused by apparent factors such as muscle overuse/overload/misuse, muscle injury, poor posture, stress (both physical and emotional), cold temperature, lack of sleep, fatigue, and less obvious factors such as poor nutrition and health. Since a part of the treatment for myofascial pain and dysfunction syndromes aims to strengthen the muscles, Rosen recommends stretching targeting specific muscle groups (back, neck and shoulders) throughout the day. Other condition such as fibromyalgia, thyroid or vitamin deficiency, hormonal, nutritional or endocrine dysfunctions, should also be recognized and treated.<sup>35</sup>

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<sup>35</sup> Norman B. Rosen, *Muscle Pain and Pianists: The Myofascial Pain Syndromes and Fibromyalgia*. ed. Kris Kropf, "A Symposium for Pianists and Teachers"(Dayton, OH: Heritage Music Press, 2002), 167-175.

### *Environmental Factors*

The cold temperature of a practice room or concert hall can adversely affect the functions of the muscles. In cold temperatures, the body tries to conserve body heat by reducing the blood flow in the extremities (hands, arms, feet, legs). Reduced blood supply in the extremities diminishes tactile sensitivity, flexibility, dexterity, and impedes fine-motor coordination. The pianist playing in a cold temperature may feel numbness and clumsiness from having cold hands and fingers, and could try to compensate by exerting more muscular force to gain control of the fine-motor coordination. This compensatory, maladaptive use of the body can lead to pain and injury. Furthermore, the reduction of the blood flow decreases the delivery of oxygen and energy to the tissues, thus diminishing the ability of the body and muscle tissues to recover from exertion and injury.

The practice rooms in many colleges, universities and conservatories, are very small, providing little space for a pianist to feel comfortable and free to play the instrument in full sound. Some practice rooms are so small that there is no space to sit with adequate distance from the instrument. Many piano students feel overwhelmed by the loud sound of the instrument in such small rooms, and try to accommodate by using the soft pedal all the time, or using ear plugs during practice. These adaptations can have negative effects on the physical coordination and sound perception. Pianists may form a habit of tightening their bodies in order to cope with the overall volume. They may even become afraid to fully project their sounds when playing in a concert hall.

### *Ergonomic Challenges of the Instrument*

The following ergonomic elements are often overlooked in the discussion of injury prevention in piano playing:

- Benches: Universities and music schools often do not provide adjustable benches in the practice rooms. Each pianist's individual height, the length of the arm, leg, and torso determine the optimal height of the bench. Sitting at the wrong height causes skeletal misalignment which in turn restricts joint mobility. To compensate for restricted joint mobility, excessive muscular effort is applied, causing muscle pain. Sitting on a hard bench with no cushion can put stress on the spine, especially on the sitting bones, since the force of the movement is not adequately absorbed on the hard wood surface. An adjustable professional concert bench with cushioning is recommended.
- Keyboard size: Modern piano keyboards are standardized at a size that is too wide for many pianists, especially female pianists, most of whom have smaller hands than their male counterparts. As a result, many pianists are regularly forced to stretch their hands to their maximum span. Chronic overextension of the hand greatly increases the risk of injury to the joints as well as to the muscles. The smaller 7/8" keyboard can provide much comfort for pianists with smaller hands when playing octaves and large chords, thus preventing many potential injuries.

- Key weight: With regard to weight and regulation, uneven and/or heavy keys require the pianist to work harder than well-regulated and lighter actions. Excessively heavy keys or unregulated action force the pianist to use maladaptive coordination, often resulting in pain and injury.
- The inherent lack of tonal clarity in a given piano: Striving to project in large concert halls (or even in a medium sized hall) may also be a contributing factor. A good piano should have resonant sound.
- The overall instrument size: Just as the keyboard size is made to fit taller and larger bodies, so too is the overall size of the piano. This element is often overlooked but its effect on the overall skeletal alignment is significant. The distance from the floor to the keys can place the keyboard so high that short pianists with short legs are unable to maintain optimal skeletal alignment. When the player is forced to sit very high to keep the arms aligned with the keys, the alignment of the lower body is distorted, which can cause pain in many areas of the body.

### *Physical Challenges of Certain Repertoire*

Pianists with small hands often risk injury with certain repertoire that require stretching and extending their hands to their maximum hand-span. Such pieces are often found in the works by pianist-composers with large hands, such as Franz Liszt and Sergei



Rachmaninoff. Pieces such as Beethoven's piano sonatas, containing many passages that are not pianistic or idiosyncratic to the body, challenge the physical limits even for the non-injured pianists. Practicing or playing percussive and repetitive pieces can exert extra strain on the muscles and tendons. Considering the vast amount of piano literature, of which many pieces are without these injurious elements, it is safest for pianists who wish to play without injury to either use extreme caution or to avoid repertoire with extreme physical challenges altogether.

CHAPTER V  
THE LISTER-SINK METHOD

**Barbara Lister-Sink: Biography<sup>36</sup>**

*The Pianist*

A native of North Carolina, Barbara Lister-Sink, is an internationally acclaimed soloist and chamber musician. She graduated from Smith College and holds the *Prix d'Excellence* from the Utrecht Conservatory, Netherlands, and studied piano with Edith Lateiner-Grosz, John Duke, Clemens Sandresky, Margaret Mueller and Guido Agosti. As a soloist, Lister-Sink has performed throughout Europe and North America, and has been broadcast numerous times on National Public Radio, the Canadian Broadcasting Corporation and Radio Netherlands. She has also been a keyboardist for the Royal Concertgebouw Orchestra of Amsterdam. Lister-Sink has collaborated with renowned musicians, including Arnold Steinhardt, Doriot Anthony Dwyer, Jan DeGaetani, the Cleveland Quartet, Harvard Chamber Players, and composers, Gyorgy Ligeti, Leon Kirchner, Joseph Schwantner, Frank Martin, Samuel Adler, and Witold Lutoslawski.

*The Pedagogue*

Lister-Sink was a member of the Artist Faculty of the Eastman School of Music from 1979 to 1986, and has also taught on the piano faculties of the Amsterdam Muziek

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<sup>36</sup> Barbara Lister-Sink, "Freeing the Caged Bird/About Lister-Sink/Biography." <http://www.freeingthecagedbird.com/biography.html> (accessed 10 July 2009).

Lyceum, Duke University, and the Brevard Music Center. She currently serves as Artist-in-Residence and Professor of Piano at Salem College in Winston-Salem, NC.

*The Global Leader on Injury-Preventive Piano Technique*

Lister-Sink is a world-renowned expert in teaching injury-preventive piano technique. She rose to international attention with the appearance in 1996 of her critically acclaimed video/DVD *Freeing the Caged Bird – Developing Well-Coordinated, Injury-Preventive Piano Technique*,<sup>37</sup> now viewed by tens of thousands of pianists worldwide. She has spent more than twenty years researching and consulting with experts in sports medicine and pedagogy, orthopedics, neurology, educational psychology, embodied cognition, pedagogy and history of keyboard technique. The 2000 edition of *Piano & Keyboard*<sup>38</sup> magazine cited her in the time line as one of the twentieth century's most influential American piano teachers. In 2002, The Music Teachers National Association recognized her *Freeing the Caged Bird* video/DVD with its Frances Clark Keyboard Pedagogy Award, calling her a "pioneer and international leader."<sup>39</sup> She is highly sought after for her injury-preventive keyboard technique workshops and is a regular presenter and clinician at national and international music organizations, including the MTNA, the Canadian Professional Piano Teachers Association, the International Klavar Foundation, and the World Piano Pedagogy Conference. In 1992, she was a presenter and performer

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<sup>37</sup> Barbara Lister-Sink, *Freeing the Caged Bird: Developing Well-Coordinated, Injury-Preventive Piano Technique*. (Lewisville, NC: Wingsound International, 1996, 2008). Video/DVD.

<sup>38</sup> *Piano & Keyboard*. San Anselmo, CA: String Letter Press, 1993-

<sup>39</sup> "Barbara Lister-Sink honored with MTNA Frances Clark award." 2006. BrowseArticle.com. [http://www.browsearticle.com/article/29582-Barbara\\_Lister\\_Sink\\_honored\\_with\\_MT.html](http://www.browsearticle.com/article/29582-Barbara_Lister_Sink_honored_with_MT.html) (accessed 22 June 2009).

for the First World Congress of Arts and Medicine in New York. As an innovator in this field, her published articles in the medical journals and books including the *Southern Medical Journal* and *Current Research in Arts Medicine* have made her teaching methods available to a much broader audience and established her as a leader in the forefront of this area. Lister-Sink also served on the editorial committee of *The American Music Teacher* and was a contributing author to *A Symposium for Pianists and Teachers: Strategies to Develop the Mind and Body for Optimal Performance*.<sup>40</sup> Her broad exposure in printed resources and personal appearances has raised awareness of well-coordinated, injury-preventive piano technique. Lister-Sink has successfully trained or retrained hundreds of pianists of all ages and levels (including numerous high-ranking professionals) from around the globe. Through her DVD, hundreds of workshops in universities, conservatories and summer institutes; intensive training workshops and appearances at professional organizations, she has helped tens of thousands of pianists remove physical impediments to their musical development. Beginning in the fall of 2009, Lister-Sink directed a fully accredited Professional Certificate Program in Injury-Preventive Keyboard Technique at Salem College, Winston-Salem, NC (the first of its kind to be offered at a college or university in the U.S. or abroad), which she designed.<sup>41</sup>

Lister-Sink acknowledges the rich history of outstanding piano teachers who have taught similar principles of good body use through their own particular methods. While a

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<sup>40</sup> Barbara Lister-Sink, *Keeping It Simple: Fundamentals of a Healthful Piano Technique*. ed. Kris Kropff, "A Symposium for Pianists and Teacher" (Dayton, OH: Heritage Music Press, 2002), 189-215.

<sup>41</sup> Lister-Sink. "Freeing the Caged Bird/Training/Certification in the Lister-Sink Method." <http://www.freeingthecagedbird.com/biography.html> (accessed 22 June 2009).

thorough tracing of influences is beyond the scope of this document, Lister-Sink emphasizes that her approach has resonance in, among many others, the Russian School of the turn of the last century; in the suppleness and ease of the teachings of Liszt and Chopin; the muscle efficiency schools of Matthay and Whiteside; and the exhaustive biomechanical and scientifically informed teaching and writing of Otto Ortmann.

### **Introduction to the Lister-Sink Method**

The DVD *Freeing the Caged Bird – Developing Well-Coordinated, Injury-Preventive Piano Technique* and the Lister-Sink Method were created after decades-long research of numerous books, articles and video resources relating to technique. The Method continues to be further refined as more research in the fields of neuroscience, learning systems, piano acoustics and physiology is published.

The Lister-Sink Method is a scientifically informed, step-by-step system of teaching the sensations and coordinations of healthful, injury-preventive keyboard technique from the foundational level of sound production to the most complex kinetic (motion, movement) patterns. Eventually, however, the technique is applied to serving the artistic demands of the music. The more radical nature of the training is based on neuroscience and the concept of effective, efficient learning through sequential, neuromuscular programming and mastery of each step before proceeding to the next step. The Lister-Sink Method is taught in an individualized, hands-on manner to convey sensations and coordinations directly. Pianists learn not only how to embody these coordinations in their technique but also how cognitively to define and explain what they

are doing in a consistent, informed and concise manner. Underlying the entire method is the assumption that piano technique is an activity of the whole body, directed by the brain, and that it is how we play, not what we play, that defines technique.<sup>42</sup>

Lister-Sink believes that tonal control, power, speed and facility result from ease, suppleness, and freedom of movement. Such qualities are achieved by learning efficient, well-coordinated movements based on functional anatomy, laws of motion, and principles of biomechanics. Furthermore, she challenges the commonly accepted notion of what “technique” is. Lister-Sink states that discomfort, pain and injury are avoidable and that well-coordinated technique is not a talent, but a skill which anyone can learn.

The innovative aspect of her approach is to begin the retraining by returning to the ultimate foundation of piano playing – production of a single sound. The crux of her method is based on the assumption that true mastery of technique requires mastery of the fundamentals of sound production.<sup>43</sup> In order to produce high quality and resonant sound, the body must work efficiently. Any unnecessary tension or malcoordination will be transmitted through the body to the instrument and will create lower quality sound. A crucial element of her method in sound production is active and continuous listening to the sound as well as cultivating highly sensitive kinesthetic awareness of the whole body while playing.

Through training, pianists can learn how to observe their bodies and connect with the instrument. By acquiring a healthful technique, they can not only prevent discomfort,

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<sup>42</sup> Barbara Lister-Sink, *Lister-Sink Method: Teacher Training Manual* (published by the author, 2009), 3,5.

<sup>43</sup> *Ibid.*, 22.

fatigue, strain and injury but their musicality can also develop as a result of having more technical freedom. This artistry may take the form of increased tonal power, broadened dynamic range and tonal palette, greater speed and facility, ease of voicing, natural sense of rhythm and timing, diverse and subtle articulations, and increased auditory acuity. Other benefits include greater focus or concentration and reduced performance anxiety. As an overall effect, healthful technique promotes a sense of physical well-being while playing, enhancing the joy felt in playing the piano and making music.

Efficient, injury-free technique combines an understanding of the workings of the human body with an understanding of the mechanism of the instrument. The Lister-Sink Method teaches basic principles of the human body and piano mechanisms and functional anatomy before the training/retraining begins. Using a model of the piano key and its action, Lister-Sink shows the hammer action and explains that the hammer strikes the strings only for a split second before it is released. Thus, unnecessary, prolonged pressing on the key is shown to be neither relevant to sound production or helpful in moving from key to key while playing.

After demonstrating how the instrument works, Lister-Sink proceeds to teach the importance of understanding how the musculoskeletal, sensory-motor, cardiovascular, and neuromuscular systems function, and how this understanding is relevant to injury-preventive piano technique.

### *Central Components of Injury-Preventive Piano Technique*

Lister-Sink teaches that the two fundamental components of injury-preventive

piano technique are optimal skeletal alignment and efficient muscular use of the whole body at the piano. Optimal skeletal alignment is fundamental not only for piano playing but also for our basic body functions. When the alignment of the spine is distorted, all bodily functions mentioned above, including the neuromuscular system, are impeded. Energy efficient muscle use prevents fatigue, strain and injury, and also promotes ease of movement, suppleness, power and facility.

The Lister-Sink method also emphasizes the critical importance of mind-body awareness and brain control of the voluntary muscles in the process of training/retraining. In other words, technique is learned not by simple muscular repetitions by a consciously unaware pianist, but by active and conscious awareness of what signals the brain is sending to which muscles for optimal neuromuscular programming

Another factor contributing to the effectiveness and success of the Lister-Sink Method is training how to avoid the accumulation of any unnecessary tension. In order to cultivate kinesthetic (sensing muscles, tendons, joints) and mind-body awareness, which aids in avoiding accumulation of muscular tension, the training/retraining process begins with cultivating awareness and control of the whole body and understanding core principles of good body use in general. Lister-Sink requires concurrent training with a certified Alexander Technique instructor, as well as study of other fields of cognitive embodiment such as the Feldenkrais Technique.

One of the unique strengths of Lister-Sink's teaching is the holistic treatment of the injured pianists undergoing the training/retraining process. Many teachers approach students only in the context of their musical activities, not realizing that the entire



being—psychological, emotional, and physical—of a person affects how she plays music. Playing-related injuries affect the pianist not just physically but also psychologically. Injured pianists become afraid of making music and of playing the instrument. Knowing that both physical and psychological health are essential to music-making, Lister-Sink provides a safe and highly supportive environment for injured pianists. She first asks the student about her history with the piano, and then inquires about the student's relationship with the piano and how she feels about the instrument. Then the student is asked whether she truly wants to continue playing the piano. This seemingly commonsense step is essential, since negative emotion can block the energy flow in the body and cause tension to accumulate, which will eventually lead to further injury. After compiling a comprehensive history of how the pianist developed the injury, Lister-Sink tailors an individualized application of the Lister-Sink Method to the unique needs of the individual. The retraining process then aids not only in establishing a healthful physical approach to the piano, but also in reestablishing a healthy relationship between the instrument and the pianist. The pianist then feels ready both physically and psychologically to engage in playing the instrument again. It is not uncommon for injured pianists to be discouraged and doubtful that they will ever recover. Lister-Sink, and those trained to teach the Lister-Sink Method, continually try to give hope of recovery, as well as inspiration to see the process of retraining through to completion, by frequently demonstrating well-coordinated technique through compelling music-making.

Injured pianists going through the retraining program in the Lister-Sink Method are treated with great care and caution. Before starting the retraining process, pianists are

referred, when necessary, to medical specialists to be evaluated to determine the exact nature of the injury and what, if any, treatment is required. Lister-Sink works in conjunction with a team of healthcare professionals sympathetic to the complexities of treating an injured pianist. This health-care team of professionals includes a psychological counselor, family doctor, osteopathic doctor, neurologist, orthopedist, physical therapist, massage therapist, chiropractor, Alexander Technique<sup>44</sup> instructor, and Feldenkrais<sup>45</sup> practitioner. Such a diverse team further demonstrates the holistic approach of the Lister-Sink Method.<sup>46</sup>

The consequences of injury among pianists can be extensive: reduced career opportunities, impaired financial status, demoralization, depression and anxiety, and even loss of joy in music-making. Unless there was a previously existing pathology, genetic defect, non-playing related injury or physical abnormality, pianists' injuries and their consequences could have been avoided if they had been taught efficient technique from the very beginning of their training.

Since many piano teachers teach technique the way they were taught, they often have very limited understanding of biomechanics and core principles of good body use, as well as very specific coordination required for playing the piano. Consequently, they often cannot effectively help their students avoid injury or remedy the causes.

Further exacerbating this systemic problem is the frequent pedagogical

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<sup>44</sup>The Alexander Technique was developed by F. M. Alexander (1869-1955) to provide training in kinesthetic awareness, skeletal alignment, and coordination. Through a network of trained practitioners, it is widely taught and practiced throughout the world.

<sup>45</sup>Feldenkrais method originated from Dr. Moshé Feldenkrais (1904-1984). It takes a form of self-education to develop mind-body awareness through movement.

<sup>46</sup> *Lister-Sink Method: Teacher Training Manual*, 17-18.

assumption that what works technically in the early stages of training will work as the student progresses through more complex kinetic repertoire. Lister-Sink believes in fully mastering the coordinations of each level of repertoire before proceeding to the next level. This practice stems from her belief that if one compromises the coordination, or allows the introduction of malcoordinations, into the simpler levels of repertoire, these malcoordinations will eventually manifest themselves and hinder the coordination in higher levels of kinetic complexity. An example of this idea is the use of high, lifted fingers and unnecessary tension in the arms and hands in simpler, slower repertoire. While these less efficient coordinations will not bring the pianist to harm in the earlier years of training, such body use will not serve the pianist well when faster, more complex and perpetual-motion repertoire is added. It is essential to apply principles of good coordination and to not accumulate tension in the earliest stages of training to avoid the “law of diminishing returns” in later repertoire.

#### *The Importance of Appropriate Hands-On Tactile Guidance*

Lister-Sink believes that it is indispensable to teach technique through direct personal guidance, since a written or verbal description of technique cannot approximate the actual physical sensations and coordinations of playing the piano. Even teacher demonstration of the coordinations for “mirroring” purposes might not necessarily lead to the appropriate coordinations and sensations in the student. Lister-Sink explained the reasons for this type of instruction in an interview in the spring 2000 issue of the journal *Keyboard Companion*:

Technique is, first and foremost, a physical, kinesthetic experience. How, then, could a written description or definition of technique serve to teach a very physical experience? We may describe poetically or scientifically the kinesthetic sensations of a golf swing, the smell of a rose, the taste of a strawberry, or the texture of velvet, but the actual experience of each defies description through words. And it is the experience of the physical sensations that we need to communicate in teaching technique.<sup>47</sup>

She further explains that a well-coordinated technique cannot be measured only by the visible appearance of the pianist. It is possible to imitate the correct movements and “look” well-coordinated even when the muscles are internally tense. Because “static” muscle tension can occur at an invisible and microscopic level that even the pianist remains unaware of, direct guidance by the teacher is essential. Lister-Sink teaches by having the student feel her arm muscles to perceive the difference between a tense and a more efficient use of muscles. With the student’s permission, she lightly touches the head, neck, upper back, arms, hands, and fingers, using only the tips of her fingers to remind and guide the student to pay attention to the body and release any tension. This is done strictly following the “Professional Tactile Guidance” defined in the *Lister-Sink Method: Teacher Training Manual*.<sup>48</sup> In the rigorous training program for certification in the Lister-Sink Method, trainees undergo extension, specific instruction in the most non-invasive, ethically appropriate and pedagogically effective ways to use tactile guidance with the student. Parents of non-adult students are required to fill out appropriate consent

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<sup>47</sup> Barbara Lister-Sink, “Let’s Get Physical: Technique: A Conversation with Barbara Lister-Sink,” interview by Scott McBride Smith, *Keyboard Companion*, vol.11, no.1 (Spring 2000): 16.

<sup>48</sup> *Lister-Sink Method: Teacher Training Manual* (published by the author, 2009), 11.

forms after having PTG thoroughly explained. In many cases, the parent or guardian, or spouses of injured pianists, are encouraged to attend the training sessions.

Another important part of the learning process is videotaping each lesson. By watching themselves, students learn to detect poor skeletal alignment, malcoordination, visible tension, unconscious movements, habits such as lip-biting and other unnecessary movements, as well as to observe good coordination demonstrated by the teacher. Additionally, lessons are always videotaped for the student to review, both for effective learning and to insure that the most appropriate, professional and ethical approach is taken.

## CHAPTER VI

### BODY USE PATTERNS THAT CAN LEAD TO INJURY<sup>49</sup>

In studying the Lister-Sink Method, in addition to learning optimal physical coordination applied to repertoire, the student is also required to study the history of keyboard technique, injury-preventive piano pedagogy, modified functional anatomy, injuries common to pianists, the piano mechanism, applied ergonomics and biomechanics, and numerous other relevant fields of knowledge contributing to healthful or potentially injurious piano technique, in order to recognize possible and avoid causes of injury.

Finding and identifying the causes of injuries are necessary in order to avoid them. Inefficient body use at the piano can be the result of habit, from training or the lack of training, from emotional and psychological patterns, or from a combination of all of these. Lister-Sink believes that two of the most common causes of physical discomfort and eventual injury at the piano involve muscular tension: its excessive application and its unrelieved accumulation. Some of the many potential causes of such tension are listed as follows:

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<sup>49</sup> Lister-Sink. "Freeing the Caged Bird/Enlightened Keyboard Technique/A Definitive Model for the 21<sup>st</sup> Century." [www.freeingthecagedbird.com/mtna2008.html](http://www.freeingthecagedbird.com/mtna2008.html) (accessed 10 July 2009).

## Overall

- Inadequate breathing: breathing is central to maintaining the energy flow in the entire body which affects skeletal alignment, coordination, muscle release, blood flow, energy production, nerve function, etc.
- Sitting position: Sitting too close or too far from the instrument restricts or compromises the range of physical motion and affects the overall skeletal alignment.
- Poor skeletal alignment and imbalance throughout the body: A slumping torso/collapsed chest, results in a compressed spine, the loss of support, and inadequate breathing; overstretching the spine to sit straight can cause muscular tension.
- Torso not balanced on the sitting bones: impedes optimal skeletal alignment.
- Head not balanced on the spine can compress the cervical spine and overtax the *trapezius* muscle.
- Joint fixation in fingers, wrists, elbows and shoulders: This induces stiffness and restricts flexibility and freedom of movement from the shoulder joint.
- Tightening, holding up, crossing of the legs and feet

- Habits: jutting head forward, tightening jaw, biting lips, etc. These little habits can lead to unnecessary tension and recruit muscles which are not suitable during playing.

### **Shoulders and Arms**

- Tension in the neck tightens the *trapezius* muscles
- Unnecessary raising of shoulders and tightening of *trapezius*
- Excessive tightening of the *trapezius* and *deltoid* muscles
- Sustained contraction of the *medial deltoid* muscles
- Deviation from lateral mid-range position of arms (too close or far from torso)
- Co-contraction (simultaneous contraction of muscle groups in opposition) of the arm muscles
- Failure to release arm muscles regularly, leading to accumulation of tension
- Excessive force used in the arms when playing *forte*

### **Wrists, Hands, and Fingers**

- Sustained deviation from the optimal arch alignment (low/high wrists)
- Sustained deviation from the lateral mid-range (neutral) position of hands
- Gripping movements and contractions of the hand muscles
- Holding the hand/fingers up in the air when the arms travel across the keyboard, thus overusing the extensor muscles.
- Hyperextension of the knuckle or other finger joint



- Moving fingers in isolation and unnecessary lifting of individual fingers
- Holding up or curling of the non-playing fingers
- Curled (hyperflexed) fingers, deviating from the natural curve of the hand
- Sustained tightening, curling of the thumb

## CHAPTER VII

### BASIC KNOWLEDGE OF THE PLAYING MECHANISMS

#### **The Mechanism of the Piano Hammer Action**

One aspect of the Lister-Sink training includes learning the basics of the piano mechanism. The complex mechanism of the piano action contains the key, jack, support, balancier, knuckle, damper, and hammer, which can be observed through visual observation. However, it may not be obvious how these mechanisms are related and how each part affects one another, since the movement of the action happens in a fraction of a second. At some point when a key is pressed or struck, the hammer moves upward and reaches the point of “escapement,” which means that it is no longer in physical contact with the key mechanism. The hammer strikes the string and rebounds, transmitting its force to the string, which vibrates the string and produces the resulting musical sound. Many authors have paid close attention to the function of the piano mechanism, although it is usually teachers who focus on controlling the tone of the piano through different types of “touch.” Betah Reeder, for example, illustrates these principles through detailed diagrams in her *The Singing Touch*.<sup>50</sup> More recent authors such as Chuan C. Chang also focus on the piano mechanism in their teachings.<sup>51</sup> One issue elaborated upon by these authors is how different movements of the keys might produce varying movements and

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<sup>50</sup> Betah Reeder, *The Singing Touch* (NY: Galaxy Music Corporation, 1943), 12,14,18,20.

<sup>51</sup> Chuan C. Chang. “Fundamentals of Piano Practice” 2008.  
<http://cnx.org/content/col10416/1.2/> (accessed 14 July, 2009).

action of the hammer during its ascent and strike of the piano string. These variations might include different degrees of acceleration and even vibration of the hammer and its shank itself, which may influence the quality of the tone being produced when it strikes the string.

Lister-Sink's priority of injury prevention seems to make her discussion of the piano mechanism emphasize certain aspects of its function. In her video/DVD, *Freeing the Caged Bird*, Lister-Sink makes a remark that the piano is a percussive instrument, and that its sound is "produced by an instantaneous action."<sup>52</sup> The video/DVD shows the hammer action in both real time and slow-motion to demonstrate how difficult it is for the human eye to detect the moment of contact. She then explains that since the hammer motion is activated by a very small amount of force (two to three ounces of weight), any extra movement after the string has been struck is unnecessary. Her focus is on making this movement mechanically efficient. If Lister-Sink's statement is true, that the hammer strike is instantaneous, then the most efficient way to press the key and activate the hammer would be an important part of any playing technique. Certainly, for injury prevention, producing sounds with minimal effort and reduced physical strain is the key. Lister-Sink's focus on injury prevention makes it important for her to emphasize the automatic and relatively simple nature of the piano mechanism, de-emphasizing the idea that producing sound on a piano might require strenuous muscular exertion.

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<sup>52</sup> Lister-Sink, *Freeing the Caged Bird* (Lewisville, NC: Wingsound International, 1996). Video/DVD.

## **The Human Body Mechanism**

Basic knowledge of how the human body functions is also important so that the instrument and the body work together advantageously to achieve efficient technique.

### *Optimal Skeletal Alignment*

The foundation of good coordination starts with optimal skeletal alignment. Pianists must be aware that the weight-bearing portion of the spine is its front part (not the back), which is located near the core of the body, inside the ribs. Thus, the spine must be balanced in the center of the body, not in the back.<sup>53</sup> Optimal skeletal alignment enables the muscles to work efficiently, and supports efficient breathing, blood circulation, nerve conduction, and brain function. When the natural curves of the spine are compromised, the muscles used in playing are not properly supported by the spine. This requires other, less appropriate muscles to be recruited for use, resulting in maladaptive, compensatory functioning. Chronic neck, shoulder, and back pain often come from the lack of this support.

Optimal skeletal alignment is achieved only by balancing the torso on the sitting bones with relatively released legs. This position gives stability and integrity to the spine and allows the body to move with freedom. The spine should be lengthened naturally while balancing on the sitting bones without trying to stretch or straighten. The shoulders should be released, the neck freed, and the head balanced on the spine. When shifting back and forth or side to side, the entire torso must move as one flexible unit from the

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<sup>53</sup>Mark, 20-24.

sitting bones. Breathing and paying attention to one's kinesthetic sensations is important to maintaining optimal alignment.

Optimal alignment of the arm, hand, finger bones is also an important component in injury-preventive piano technique. The arch is the most stable and efficient structure to support the entire arm and this structure provides a solid base for movements, instead of the muscle tensing creating movements.<sup>54</sup> The forearm, hand and finger bones should be assembled into a natural, arched bridge-like structure for supporting weight or pressure from the arm during playing. With the upper arms hanging pendulously by the sides, the top of the forearm is parallel to the ground from the elbow to the knuckles, and the hand and finger bones form a natural arch to the fingertips. The capstone of this quasi-arch is seen both underneath the wrist and at knuckles. The bench height must be adjusted accordingly. During playing, arms, hands, and fingers must also remain within a mid-range of motion both vertically and horizontally.

The optimal alignment of the legs and feet should not be neglected. The ball of the foot, instead of toes, should be placed on the pedal. The feet should not be held up in the air when not using the pedal. The left foot or leg should not dangle loose when not in use. The left leg should give support to balance the torso, and should be used to counterbalance the shifting weight of the torso on the sitting bones when playing in the upper register. Barbara Conable's the book, *What Every Musician Needs to Know About the Body: The Practical Application of Body Mapping to Making Music*, shows a clear diagram of an ankle joint and shows how the piano pedal is used. When pressing on the

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<sup>54</sup>Mark, 110-112.

piano pedal, the movement comes not from the heel, but from the center of the foot where the lower leg bones and the foot bone meet.<sup>55</sup>

### *Antagonistic Muscles*

Many pianists injure themselves from accumulated muscle tension and/or co-contraction of the antagonistic pairs of muscles (*biceps* and *triceps*, *extensors* and *flexors*). Antagonistic muscles refer to the muscles having opposite functions, contraction of one neutralizing the contraction of the other. In other words, muscles work in pairs; when the arm is raised, the biceps contract while the triceps relax. Similarly, when the arm is lowered, the triceps contract and biceps relax. Co-contraction means contracting both *biceps* and *triceps*. Co-contraction stabilizes joints for weight bearing. However, as the pianist moves side to side and up and down at the keyboard, unnecessary co-contractions can impede easy, free movement and fatigue muscles.

### *Muscles Supporting Arm Movement*

Pianists must be aware of other anatomical facts in order to avoid injury. Many of us may think that we move our arms from the shoulder; however, the arm movement originates from the *sternoclavicular* joint, the first joint of the arm structure. If the shoulders are rounded or collapsed, the arm movement becomes restricted. The arms move freely when they hang pendulously from the shoulder joints. The muscles around the neck and shoulder extend to, and are connected to, the arm muscles. These muscles

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<sup>55</sup> Barbara Conable, *What Every Musician Needs To Know About the Body: The Practical Application of Body Mapping to Making Music*, rev. ed., (Portland, OR: Andover Press, 2000), 32-33.

include the *pectoralis*, *deltoid*, and *trapezius* muscles. Any tension or unnecessary contraction in one of these muscles will impede arm coordination. The *pectoralis* muscles cover the entire chest and connect to the upper arm where the *deltoid* muscles meet. The diamond-shaped *trapezius* muscles are attached to the base of the skull, and they extend downward on the neck, shoulders, and the back. These muscles all support the movement of the arms. Moreover, efficient arm movement requires the support of the back and abdominal muscles.

### *Neuromuscular Programming*

Since birth, our complex coordinations and habitual physical responses, including the “Basic Stroke” of the Lister-Sink Method, are learned through neuromuscular programming. *Neuro* refers to the nervous system, and *muscular* refers to muscle tissue. All muscular movements are initiated by the brain sending signals to the muscles. Neuromuscular programming is achieved through kinesthetic awareness in which the pianist exercises contracting and releasing different groups of muscles. The exercises in the initial stage are analogous to learning alphabets and vocabulary in a language. With the mastery of basic elements, one can learn to make simple sentences and then progress to complex sentences. Comparable to learning alphabets and vocabulary, learning the fundamental coordination takes the longest time in the training/retraining process.

Our basic body movements are learned in our childhood through experience. Basic movements like walking and riding a bicycle are programmed deeply in our brain and became so automatic that we do not have to consciously execute them. It must be

noted that old habits must be unlearned if they are to be replaced with new ones, due to the interference tendencies of the old programming with the new one. Exercises intended for this purpose must be done with mindfulness and with long pauses between repetitions. In the absence of mindfulness and kinesthetic awareness, the exercises serve no purpose and could become injurious. Pianists need to realize that inefficient technique can also be programmed through repetition; therefore it is extremely important to pay attention to how they practice.



CHAPTER VIII  
THE BASIC PRINCIPLE OF TONE PRODUCTION:  
THE “BASIC STROKE”

**First Stage of Training: Cultivating Kinesthetic Awareness  
and Appropriate Musculoskeletal Use of the Whole Body**

In training the fundamentals of well-coordinated, whole-body piano technique, the Lister-Sink divides instruction into two stages: whole-body musculoskeletal awareness and the “Basic Stroke,” defined as the foundational sensations and coordination of producing one sound efficiently. The first stage, taught concurrently with the Alexander Technique, fosters cultivation of kinesthetic awareness and overall muscle awareness and control through simple whole-body relaxation exercises and core principles of efficient musculoskeletal use in general. All exercises incorporate the basic technique used in Alexander Technique. Lister-Sink uses two “Cue Sheets” placed on the piano rack as kinesthetic reminders in preparing for optimal body use. The first “Cue Sheet” which reflects the principles espoused in the Alexander Technique instruction, gives fundamental cues to be used at all times when sitting on the piano bench, and it is useful even when sitting on a desk chair. Lister-Sink believes that efficient body use in daily life promotes efficient body use at the piano. She is often quoted as saying, “The

world is your practice room.” Cue Sheet No.1 contains the following cues:<sup>56</sup>

Watch the BREATH

Balance torso on SITTING BONES

Allow SPINE gently to lengthen

Allow SHOULDERS to remain relaxed

Free NECK of unnecessary tension

Balance HEAD lightly on torso

Feel pendulous ARMS supported by torso

Sense FEET supported by floor

Allow LEGS to fall gently apart

Maintain KINESTHETIC AWARENESS

Watch the BREATH

The basic principles of the Alexander Technique must be learned before proceeding to the fundamental coordinations and sensations of producing sound, or the “Basic Stroke.” In this way, the whole body, directed by the brain, will be used optimally for learning each new coordination. However, this initial stage does not require more than several hours of instruction before proceeding to study tone production. Lister-Sink herself requires concurrent study of the Alexander Technique, and anyone studying the Lister-Sink Method is urged to study with a certified instructor in Alexander Technique.

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<sup>56</sup> *Lister-Sink Method: Instructional Manual*, 14.

Other cognitive embodiment disciplines, such as the Feldenkrais Technique, may be used in the absence of an Alexander Technique instructor.

### **Second Stage of Training: “The Basic Stroke” or Fundamental Sensations and Coordinations of Sound Production**

Lister-Sink has drawn upon sports analogies such as fundamental golf or tennis swings to explain the various components of her “Basic Stroke,” the fundamental coordination and sensations of playing one note. This coordination is usually taught and mastered over several days of supervised guidance, or several lessons. It is sound-production at its most primitive and simple at the piano. Later, this simpler coordination, or “Basic Stroke,” evolves into much more complex and subtle forms, as the kinetic patterns and music require.

Following is a simplified description of and instruction for learning the four components of the “Basic Stroke.” It is, however, impossible to convey fully through the written word the appropriate way to do these exercises. Because terms and directives can too easily be misunderstood or misinterpreted, learning must occur in a hands-on manner to insure accuracy of understanding and ultimate success.

The “Basic Stroke” has four components: (1) easy, efficient lift of the forearm; (2) “free fall” of the forearm; (3) optimal alignment of the arm/hand/fingers bones; (4) instantaneous release of all unnecessary muscle tension on landing. Individual components must be mastered separately before integrating them into a single coordination. In order to learn these components without old habits or

neuroprogrammings hampering the new coordination, preparatory exercises are done away from the instrument, instead of on the piano. The three components are first exercised on the thighs.

### *Preparatory Exercises*<sup>57</sup>

#### Component 1: Easy Lift of the Forearm

- (1) Prepare the body following the Cue Sheet No.1.
- (2) Rest forearms on thighs, while tuning into the kinesthetic awareness.
- (3) Allow the upper arm to hang pendulously, supported by the torso.
- (4) Lift the forearm straight up about four to six inches, engaging only the brachialis/biceps.
- (5) Keep the muscles in the forearm released.
- (6) Maintain a released wrist joint (the lift should be just high enough for the student to feel the slight pull of gravity on the hand and fingers).
- (7) Keep the hand and fingers released (in this stage of training).
- (8) Release the biceps/brachialis muscles and let the arm simply fall onto the thigh and rest there.
- (9) Pause for at least five seconds, or as long as it takes to scan the muscles and review each item in the Cue Sheet No.1.

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<sup>57</sup> All of the following exercises and examples are reproduced by permission of the author from Barbara Lister-Sink, *Lister-Sink Method Instruction Manual: Developing Well-Coordinated, Injury-Preventive Keyboard Technique* (published by the author, 2007), 20-21.

- (10) Pay attention to the kinesthetic sensations. Sense internal energy flowing through the entire body.

### Component 2: “Free Fall” of the Forearm

After mastering the easy lift of the forearm, a quasi “free fall” of the forearm can be learned.

- (1) After lifting the forearm easily and efficiently, let it fall freely onto the thigh.
- (2) Do not force, thrust or float the forearm down. The forearm must fall with gravity.
- (3) Take time (at least five to ten seconds) to scan the arm muscles and review the Cue Sheet No.1.
- (4) Repeat mindfully three to five times, with sufficient time to scan in between.

It must be noted that true free fall of the forearm is used as a programming tool for programming the kinesthetic control, and it is not the final goal of the Lister-Sink Method. Once the student masters the Basic Stroke, other forms of more subtle and complex lowering of the forearm (such as thrust and slow-motion free fall) will be introduced and incorporated in playing the repertoire. Similarly, the verticality of the Basic Stroke is used only in the initial stages of learning the Basic Stroke. When multiple notes per stroke are introduced, the student learns to coordinate the arm in complex combinations of trajectories – vertical, horizontal, diagonal, rotational, elliptical, etc.

Other forms of lowering the forearms are (1) thrust, using *triceps* and (2) smooth, gradual lowering. The second form is sometimes referred to as “slow-motion free-fall”

because it is thought that the gradual acceleration mimics the equation for “free fall,” only at a slower tempo. The *brachialis/biceps* are gradually and smoothly releasing control of the forearm. However, it is important to note that, in this stage of training, the muscles of the forearm are fully released. It is the rate of the speed releasing the *brachialis/biceps* muscles that differentiates the regular free-fall and the slow-motion free-fall. All three types of coordination can be practiced on the thighs.

### Component 3: Optimal Alignment of the Forearm, Hand, and Finger Bones on Landing

The next step is learning to support the arm weight on finger tips in optimal alignment. The optimal alignment of the hand and forearm is represented in a structure of an arch or a bridge. The arch or bridge forms underneath the hand and the forearm while the top of the hand and the forearm remain flat from the knuckle bridge to the elbow (The natural arch shape of the hand is encouraged in initial stages of training by use of various appropriately sized sports balls or pieces of round fruit. The student is also instructed to note the natural, metacarpal arch of the hand as it hangs by the side while the student views it in a mirror.)

- (1) Rest the fingertips in the natural hand arch on the thigh.
- (2) Lift the forearm using only the *brachialis/biceps* while keeping the fingertips on lightly resting on the thigh.
- (3) Feel the weight of the arm balanced lightly on all five fingertips.
- (4) Isolate each tip and balance on one tip at a time.

- (5) Make sure to keep all the other non-weight-bearing fingers released and lightly resting on the thigh. It is recommended to use a mirror to check the optimal arch.

#### Component 4: Instantaneous Release

- (1) Allow the upper arm to hang pendulously, supported by the torso
- (2) Lift the forearm efficiently and easily
- (3) Land on optimally aligned arm, hand and finger bones
- (4) At moment of impact, release all pressure (muscle tension in lower arm, hands and fingers) instantaneously, thus allowing the shock to be transmitted harmlessly through the arms.
- (5) Monitor forearm muscles for complete release of all unnecessary tension while maintaining optimal alignment of forearm, hand and finger bones.
- (6) Check in the mirror for optimal alignment while supporting released forearm with brachialis/biceps.
- (7) Make sure upper arm is hanging freely with gravity, elbow joints released.

After learning each component, the next step is to integrate all components into one smooth coordination. This is accomplished through the following steps:

- (1) Place the hand with the finger tips resting on five adjacent white keys in the optimal alignment for landing.

- (2) Make sure that the upper arm (*humerus*) is hanging with gravity.
- (3) Lift the forearm easily with the brachialis/biceps.
- (4) Allow the forearm to fall freely, landing on the third finger tip.
- (5) Allowing all other fingers to rest lightly and simultaneously on the key surfaces.
- (6) Release all unnecessary muscle tension of the forearm and hand immediately.
- (7) Maintain just enough pressure on the key to keep it depressed.
- (8) Let the forearm to slowly lower into gravity onto the thigh.
- (9) Review the Cue Sheet No.1 while letting the arm rest on the thigh.

This exercise is then repeated in the other arm. When the student has mastered it on the third finger, it is practiced on the other fingers. After mastering the stroke on each finger, the student plays a five-finger pattern diatonic scale up and down with enough pauses to release the muscles between each stroke.

It is critical to note that each stage of training must be mastered, including the simplest components of the “Basic Stroke.” Doing the exercises without the mastery and mindful awareness will likely result in little success and even malcoordination. The Lister-Sink Method is based upon the principle of *mastering steps in sequence*. In this way, the brain learns the new neuromuscular program effectively and thoroughly, in other words, the coordination becomes an automatic program so that the pianist eventually does not need to think about executing the coordination.

For the above reason, subsequent exercises, studies and repertoire are carefully



sequenced to give the brain and body sufficient time to master each level of coordination. Jumping back into complex pieces and old repertoire too soon will usually activate the old, injurious program and impede progress. It should be noted that while cultivating a body of physical knowledge through the Lister-Sink Method, it is essential for the instructor to use creativity and flexibility – the art of teaching – in conveying this information effectively and permanently to the student. Boredom or inattentiveness will inevitably lead to discouragement and a breakdown in the learning process. It is imperative that the student be involved and engaged in the entire process.

### **Examples of Exercises and Studies used in the Initial Stages**

The following examples represent typical material that can be used for the initial training stage using one note per stroke. It is important to note that all initial exercises must be done hands separately. Students should not play both hands together until all coordination is mastered and has become automatic.

#### *One Note per Basic Stroke*

This is the most crucial stage of the Lister-Sink method. Mastering the one note per Basic Stroke establishes the fundamental of piano technique upon which more complex coordinations are built. Therefore, it must be practiced with great attention to the kinesthetic awareness. These exercises must be done slowly with pauses in between each note. Only a five-finger range is used for the purpose of keeping the exercises short and

simple so that the old programming pattern will not emerge during the reprogramming exercises. Only the right hand has been used for illustrating examples. The left hand should also be exercised equally. The initial exercises are done all on white keys for ease and comfort. Playing on black keys (higher plane) may pose extra challenge both physically and psychologically.

### Exercises within the Five-Finger Range

- (1) Five-finger pattern scale, up and down. G major, D and A minor five-finger pattern (all white keys) may also be practiced.

#### (a) Middle finger

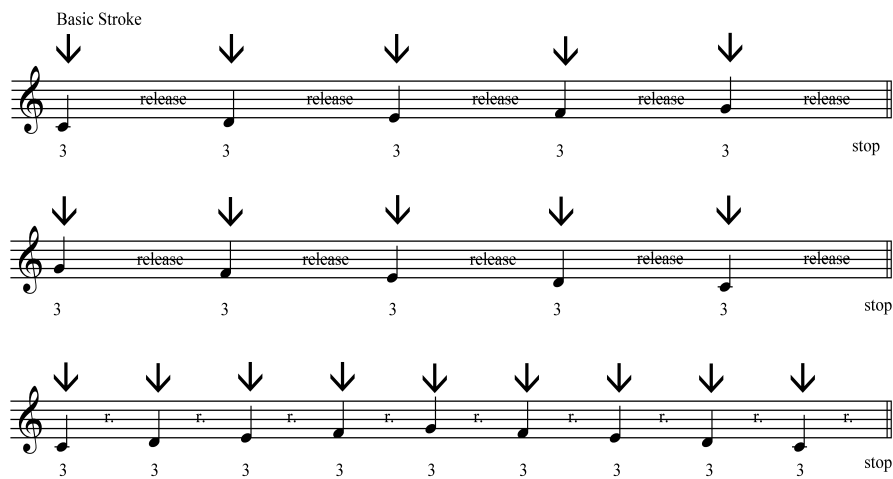


Figure 1: One Note per Basic Stroke using the middle finger

(b) All five fingers

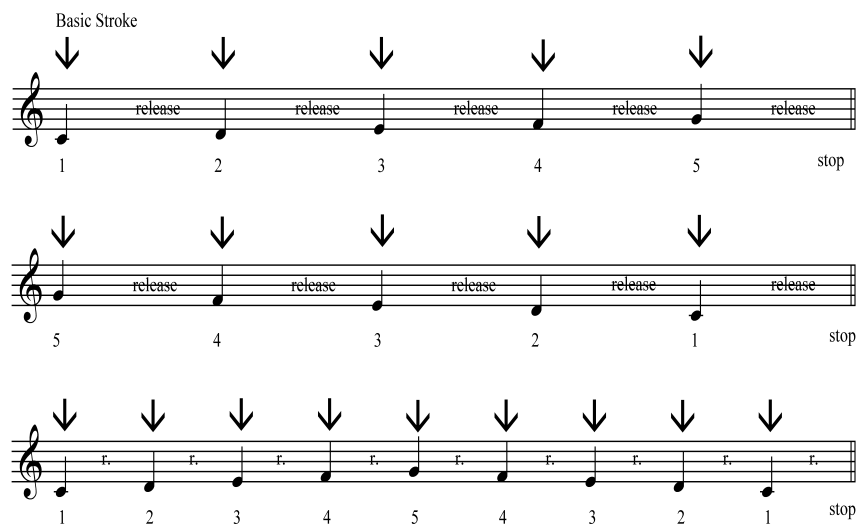


Figure 2: One Note per Basic Stroke using all five fingers

(2) Intervals together, starting with a fifth (seconds, thirds, fourths, fifths)

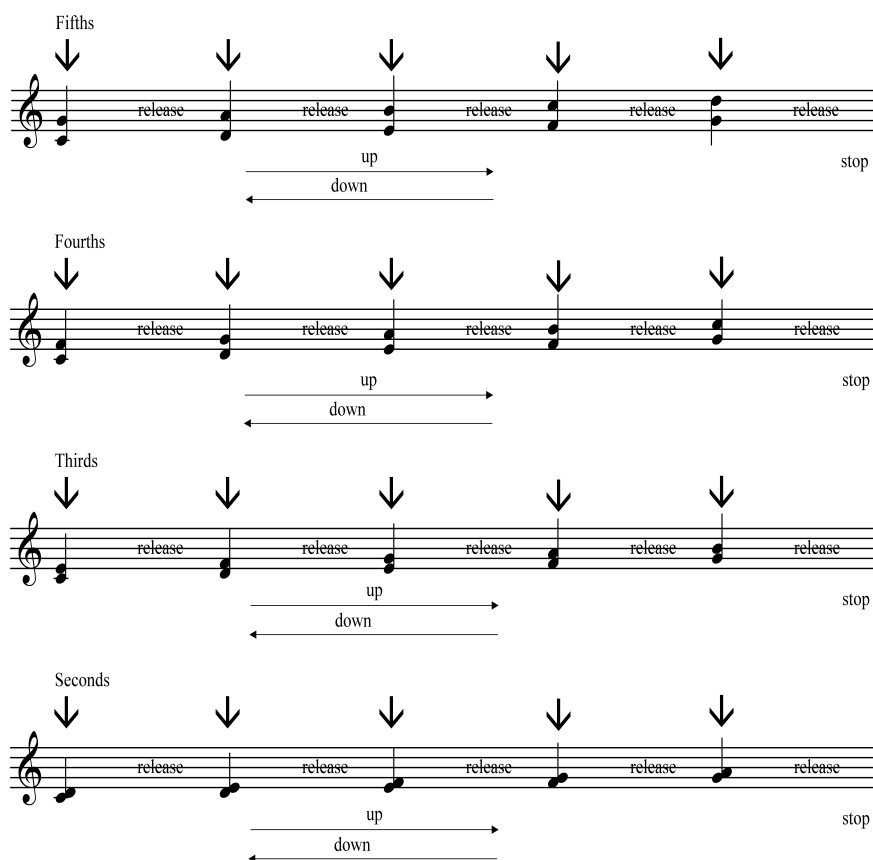


Figure 3: One Note per Basic Stroke - Intervals

- (3) Broken triads – white key triads (F and G majors and D and A minors) may be practiced as well. Thumb and the fifth finger should be practiced with caution: these fingers must be supported by aligning them with the hand and arm.

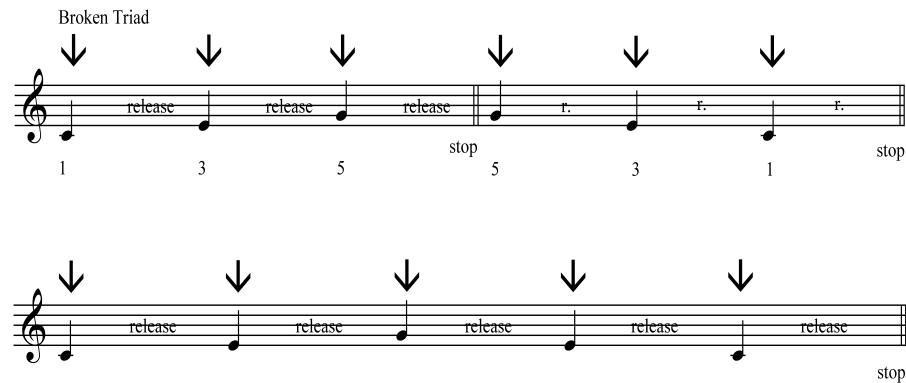


Figure 4: One Note per Basic Stroke – Broken Triads

### Additional Exercises and Repertoire Recommended by Lister-Sink

The following pieces are selected carefully by Lister-Sink to be used for initial stage of learning the Basic Stroke: <sup>58</sup>

#### (1) Sight-Reading Exercises

- (a) Hanna Smith, *Progressive Sight-Reading Exercises* (five lines per day)
- (b) Béla Bartók, *Mikrokosmos* Book I (two to three per day)
- (c) *International Library of Piano Music*, Vol., 11 (five lines per day)

#### (2) Repertoire

- (a) Arvo Pärt, *Für Alina*
- (b) Eric Satie, *Three Gymnopédies*

<sup>58</sup> *Lister-Sink Method: Teacher Training Manual*, 31.

(c) Béla Bartók, *Mikrokosmos* Vol. I, Nos. 1-10, 13-21

(d) Robert Schumann, “Chorale” from *Album for the Young*

(e) Frédéric Chopin, *Prelude in E minor*, Op. 28, No. 4

### **Programming the “Basic Stroke” into Increasingly Complex Movement Patterns**

The Basic Stroke can be programmed into increasingly complex movement patterns by expanding the five-finger pattern range and also by incorporating more than one note per stroke. The exercises by which this programming is developed are as follows: it should again be noted that the actual mastering of these simple linking exercises requires considerable time and monitoring by the instructor. How the student plays or coordinates is far more important than what the student plays.

#### *Linking Exercise*

After mastering the five-finger pattern scale, the whole diatonic scale is practiced in two blocks and linked together. Note: examples show only the right hand. The left hand should also be practiced. Then, practice the link between blocks 3-1 for the ascending scale, then 1-3 for the descending scale. The following examples illustrate how to practice linking:

(1) Scales: Divide one octave scale into two blocks, 123 – 12345 in C major.

Practice each block slowly, releasing between each note, one note per stroke, three times each block.

The figure displays three musical staves illustrating scale exercises in C major.

**Staff 1:** Shows two blocks of a scale.   
 - **block 1:** Notes C (1), D (2), E (3).   
 - **block 2:** Notes F (1), G (2), A (3), B (4), C (5).   
 Downward arrows indicate the stroke direction for each note. A double bar line separates the two blocks.

**Staff 2:** Shows linking exercises between the blocks.   
 - **Linking 1:** Connects block 1 to block 2. Notes E (3) and F (1) are linked. An arrow labeled "up" points from E to F, and an arrow labeled "down" points from F back to E.   
 - **Linking 2:** Connects block 2 to block 1. Notes C (5) and B (4) are linked. An arrow labeled "up" points from C to B, and an arrow labeled "down" points from B back to C.

**Staff 3:** Shows a continuous scale exercise.   
 - Notes: C (1), D (2), E (3), F (1), G (2), A (3), B (4), C (5).   
 - A "linking" bracket connects the E (3) and F (1) notes.   
 - Arrows labeled "up" and "down" indicate the direction of the scale run.

Figure 5: Linking Exercises - Scales

(2) Arpeggios: Divide one octave arpeggio, 123 – 1235 in C major (F and G majors may also be used). Practice each block slowly, releasing between each note, one note per stroke, three times each block. Then, practice the link between blocks 3-1 for the ascending arpeggio, then 3-1 for the descending arpeggio.

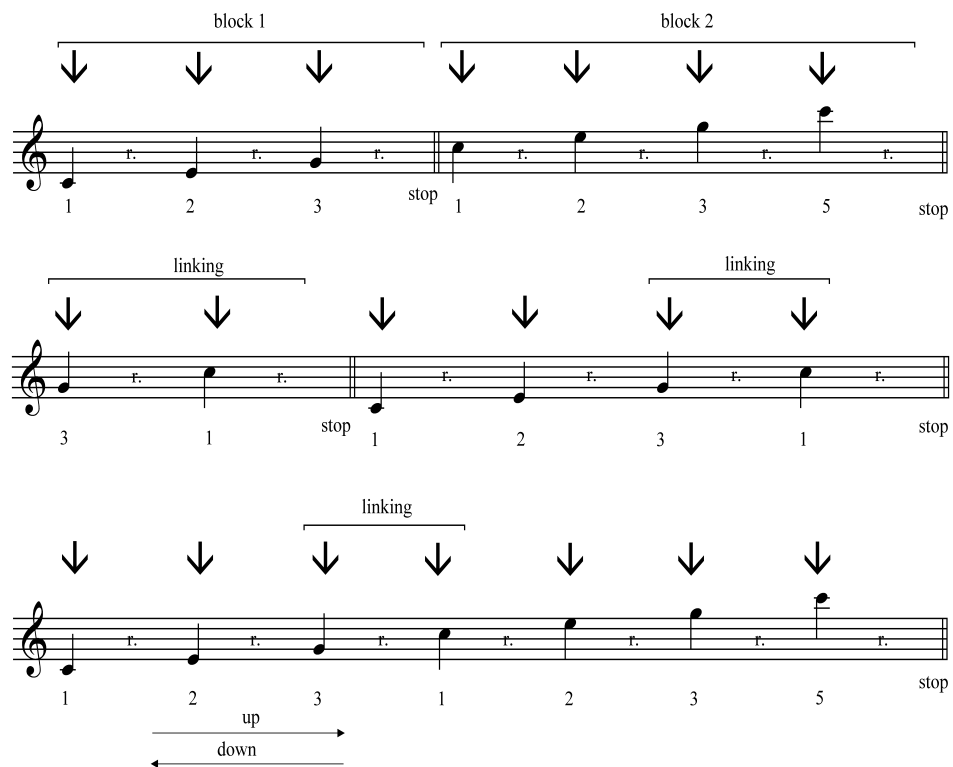


Figure 6: Linking Exercises – Arpeggios

The student should play these exercises as slowly as needed to make sure the forearm muscles are released between each stroke, and the upper arm is hanging pendulously with the *medial deltoid* muscles released. Play each exercise twice. The first time, allow the forearm and hand muscles to relax completely between each one-note



stroke, all the way up through the shoulders. The second time, maintain the carpal and metacarpal arches but release the forearm muscles completely. Lister-Sink continuously emphasizes the importance of mindfulness during practice and warns that practicing without the awareness of the body not only wastes time but can also cause injuries.

### *Multiple Notes per Basic Stroke*

After the Basic Stroke is mastered on each finger and each arm, the student progresses to playing two notes per Basic Stroke, and then to playing three, four, five notes per Basic Stroke. In this way the forearm muscles are constantly “recycled” or released and no tension is accumulated. Describing the coordination and sensations involved in these incrementally more complex coordinations would be, at best, inadequate, and, at worst, totally misleading. It is surely beyond the scope of this discussion.

The “Stroke Pattern” is eventually determined by the myriad artistic and technical requirements of the music. The following examples represent typical repertoire that can be used for the initial training stage using two or more notes per stroke.

### *Exercises for Multiple Notes per Basic Stroke*

The following exercises are used for the initial stage of programming multiple notes per stroke. They must be done slowly and enough pauses in between to program new coordination. Keeping each exercise short is important to avoid mindless practice. Although examples show only the right hand, the left hand should also be practiced.

## Two Notes per Basic Stroke

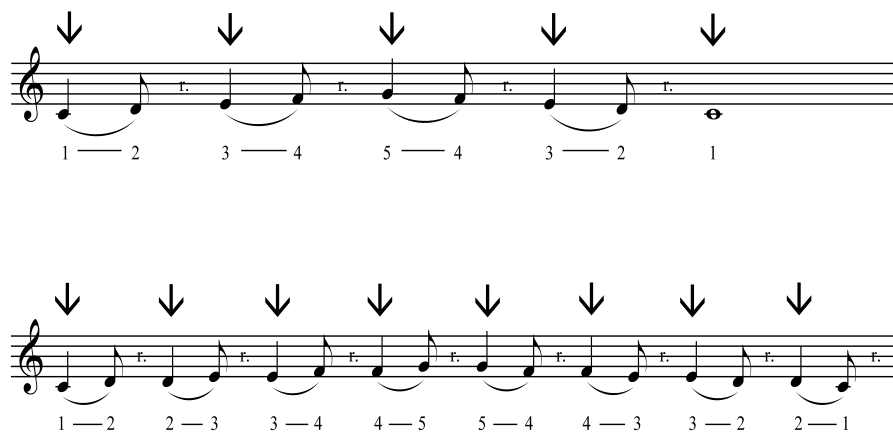


Figure 7: Two Notes per Basic Stroke

### Three Notes per Basic Stroke

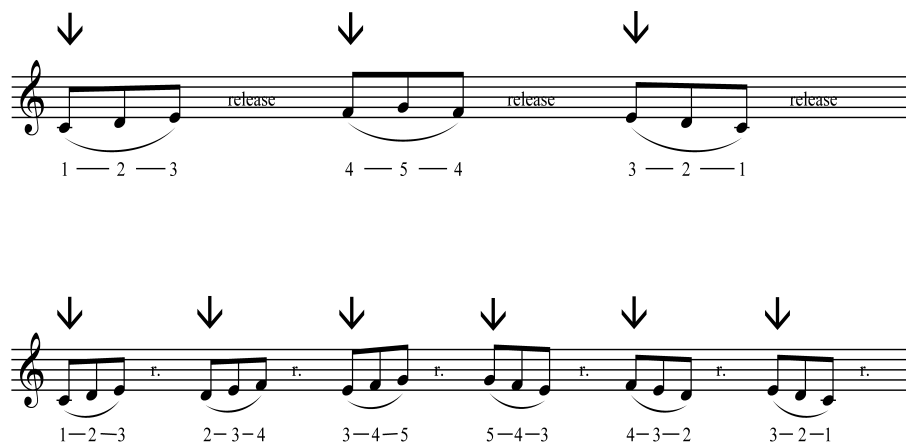


Figure 8: Three Notes per Basic Stroke

### Four Notes per Basic Stroke

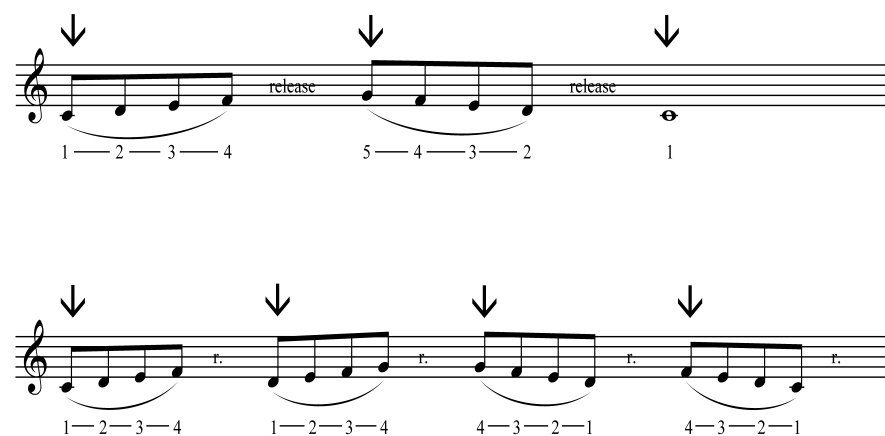


Figure 9: Four Notes per Basic Stroke

### Five Notes per Basic Stroke

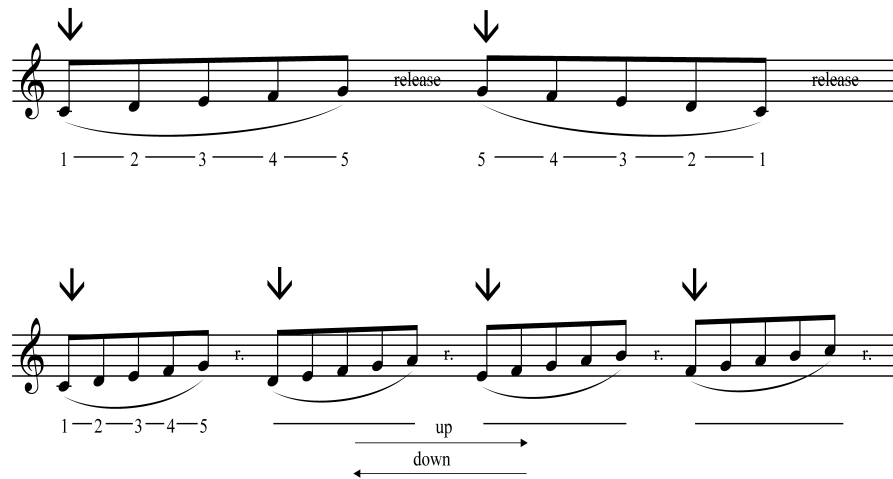


Figure 10: Five Notes per Basic Stroke

### *Additional Repertoire for Learning Multiple Notes per Basic Stroke*

The following examples are some of the pieces carefully selected by Lister-Sink to be used for the beginning stage of learning multiple notes per Basic Stroke.<sup>59</sup>

### Two Notes per Stroke

- Béla Bartók, *For Children* - Vol. 1, No. 3,
- Jeanine Yeager, *Fresh Impressions*
- Edward MacDowell, “To a Wild Rose” from *Woodland Sketches*, op. 51
- Vincent Persichetti, “Berceuse” from *Little Piano Book*, Op. 60, No.1

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<sup>59</sup> *Lister-Sink Method: Teacher Training Manual*, 31-33.

### Three Notes per Stroke

- Robert Schumann, “Little Etude,” from *Album for the Young*, Op. 68
- J. Burgmüller, “The Clear Stream” and “Angel’s Voices” from *25 Progressive Pieces*, Op. 100, No. 7 and No. 21
- Domenico Scarlatti, *Sonata* in G major

### Four Notes per Stroke

- J. Burgmüller, “Sincerity” from *25 Progressive Pieces*, Op. 100, No. 1
- C. P. E. Bach, *Solfeggietto* in C minor
- J. S. Bach, *Little Prelude* No. 1 in C major, BWV 924

### Five Notes per Stroke

- Dmitri Kabalevsky, “Little Joke” from *30 Children’s Pieces*, Op. 27

### Six Notes per Stroke

- J.S. Bach, Prelude in C major from *The Well-Tempered Clavier*, Book I

One of the critical components of well-coordinated piano playing is the elliptical/cyclical movement of the arms, which generates momentum to play a succession of multiple notes and aids in moving the hand and fingers smoothly to the designated keys. It is therefore suited for legato playing. Forearm rotation releases the arms, hands and fingers, and works with the arm cycling. Adjustments made by

horizontal/lateral, vertical, and diagonal movements of the arms lead the hands to appropriate keys in optimal alignment.

## CHAPTER IX

### MUSICAL EXAMPLES

#### **Repertoire in the Beginning Stage of Training / Retraining**

These examples are some of the pieces carefully selected by Lister-Sink for the purpose of programming the neuromuscular coordination of the Basic Stroke. In the initial stage of learning these pieces, phrases must be practiced in fragments at first, to assure good coordination, and one by one, those fragments will be linked together later. An important key of training/retraining is to temporarily suspend music-making and focus on the biomechanical foundation in the initial stages of training in order to avoid accumulation of muscular tensions.<sup>60</sup>

#### *One Note per Stroke*

*Für Alina* by Arvo Pärt offers an excellent opportunity not only for programming the Basic Stroke through kinesthetic awareness, but also for developing mind-body awareness. Written in a free temporal style in a soft dynamic with the musical expression, “Calm, Exalted, Listening to one’s inner self,” this piece encourages introspection, tuning into kinesthetic sensations, as well as connecting with the instrument through active listening and feeling of the sound. The piece starts with a pedal tone B in the lowest register and another B, two octaves up, producing overtones on these notes, and the

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<sup>60</sup> *Lister-Sink Method: Teacher Training Manual*, 22.

sustained damper pedal frees all other strings to vibrate sympathetically. Lasting for eleven measures (the entire composition has fifteen measures), this pedal tone allows the strings to vibrate harmoniously with the upper register notes, creating a broad spectrum of resonating sounds, inspiring the pianist to feel the vibrations through the piano and the body.

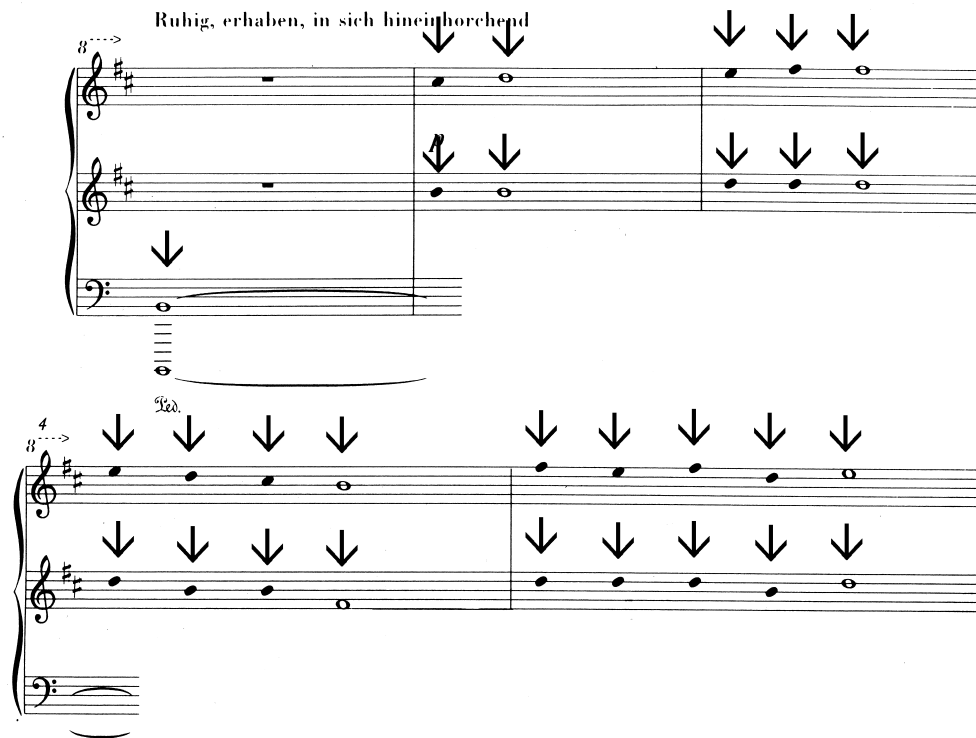


Figure 11: Arvo Pärt, *Für Alina*, mm. 1-5.<sup>61</sup>

<sup>61</sup> Arvo Pärt, *Für Alina*, in *The Century of Invention: Piano Music of the 20<sup>th</sup> Century, Selected and Introduced by Maurice Hinson* (Valley Forge, PA: European American Music Corp., 1996), 14. (reproduced with permission from Universal Edition A.G., Wien 19823)



The following piece is recommended for its simple chordal structure falling within a natural hand span. Short phrases with frequent fermatas provide opportunities to release any unnecessary muscular tension. Initially, these chords should be played slowly with enough pauses (at least three seconds) in between to assure complete release. Extra pause may be taken in the middle of the phrase if necessary. Gradually, the length of the pauses will be shortened and the phrases will be played smoothly.

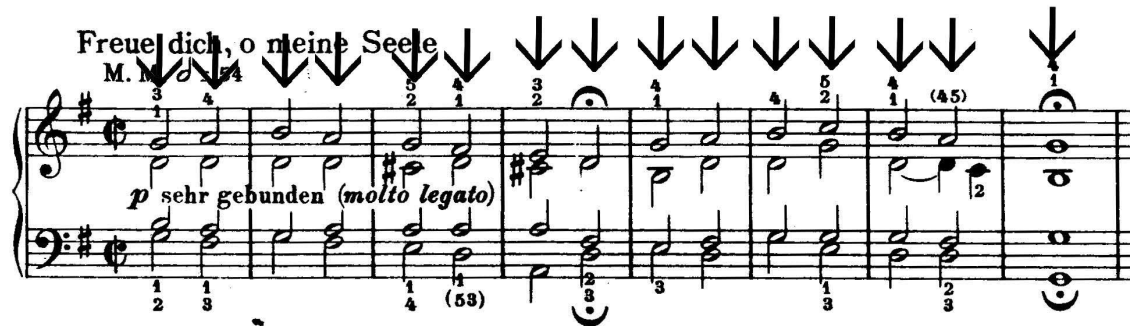


Figure 12: Robert Schumann, “Ein Choral,”  
from *Album für die Jugend*, Op. 68, mm. 1-8.<sup>62</sup>

### *Two Notes per Stroke*

This piece contains one and two notes-per stroke in the right hand with a chordal left hand accompaniment. The left hand plays some two notes per stroke in the middle section. The challenge in this piece is to release the hand and fingers while holding a half note in the thumb. After mastering one and two notes per Basic Stroke, the entire melodic

<sup>62</sup>Robert Schumann, “Ein Choral,” from *Album für die Jugend*: Edited according to the manuscript and from her personal recollections by Clara Schumann. Compiled and revised by Alexander Lipsky. New York: Edwin F. Kalmus, 1900, 16.

line under the slur may be played in one Basic Stroke as the music indicates.

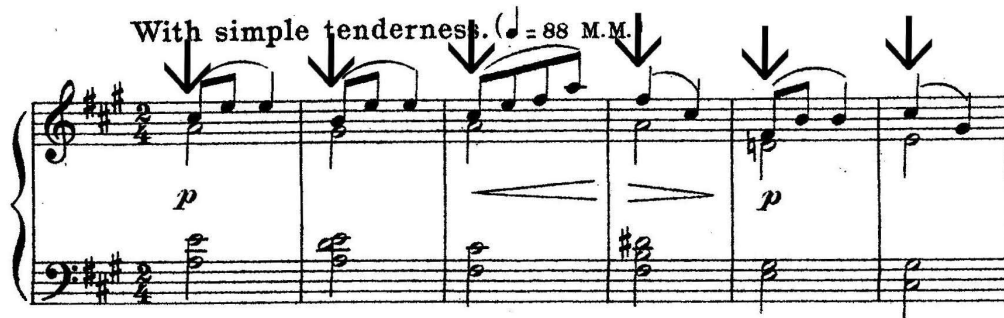


Figure 13: Edward MacDowell, “To A Wild Rose,”  
from *Woodland Sketches*, Op. 51, mm. 1-4.<sup>63</sup>

### *Three Notes per Stroke*

In order to become familiar with the notes, the triplets may be practiced in chords before trying to play three notes per stroke. First, all of the notes in a measure are played simultaneously as simple chords. Next, notes in each hand are played together, and played alternately. Finally, all the triplets are played as written. The forearm lift is used to initiate the Basic Stroke, after which the forearm moves laterally in a subtle way, and then lifted with a slight rotation by the end of the last note of the triplet. A transferring of light arm weight should be felt during the lateral move. The *humerus* bone in the upper arm should move easily and freely from the shoulders during the triplet, and then always return to the “default” position of release and hanging with gravity between each three-note stroke pattern.

<sup>63</sup>Edward MacDowell, “To A Wild Rose,” from *Woodland Sketches*. New York: Arthur P. Schmidt Co., 1899, 6.

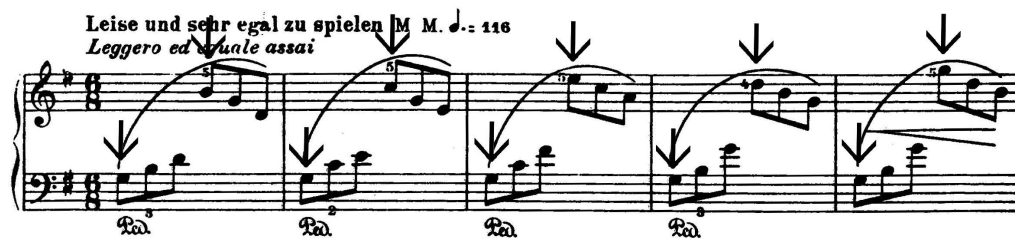


Figure 14: Robert Schumann, “Kleine Studie,”  
from *Album für die Jugend*, Op. 68, mm. 1-4.<sup>64</sup>

#### *Four Notes per Stroke*

In the A section, the right hand plays a four-note-per-stroke pattern supported by a whole note bass chords in the left hand. The B section contains the four-note-stroke pattern in both hands moving simultaneously toward the body (abduction) as well as a scale and alternating thirds patterns in the left hand. The right hand further explores different movement pattern using wider intervals.

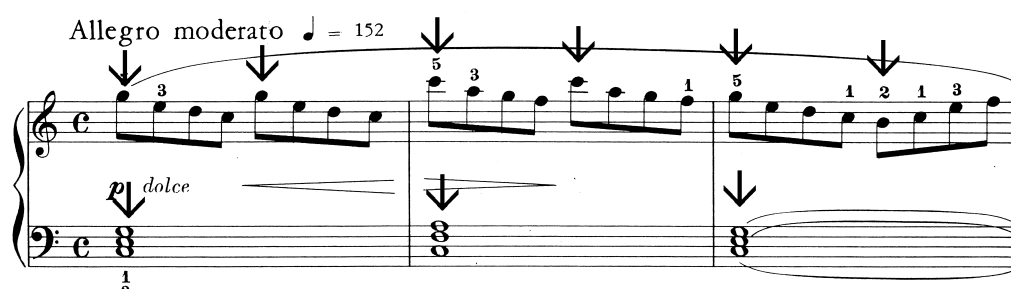


Figure 15: Johann Burgmüller, “Sincerity,”  
from *25 Progressive Pieces*, Op. 100, mm. 1-4.<sup>65</sup>

<sup>64</sup>Robert Schumann, “Kleine Studie,” from *Album für die Jugend: Edited according to the manuscript and from her personal recollections by Clara Schumann*. Compiled and revised by Alexander Lipsky. New York: Edwin F. Kalmus, 1900, 26.

<sup>65</sup>Johann Burgmüller, “Sincerity,” from *25 Progressive Pieces*, Op. 100. Edited by Willard A. Palmer. Van Nuys, CA: Alfred, 1992, 2.

### *Five Notes per Stroke*

The rapid five-notes-per-stroke pattern is utilized extensively in the right hand throughout the piece. The one-note-per-stroke staccato figure in the left hand alternates with the right hand, giving a beat to refresh each stroke. A thrust is used at the end of the stroke on the last note in the group with a staccato and an accent. A quick, light thrust is used for each of the staccato eighth note.

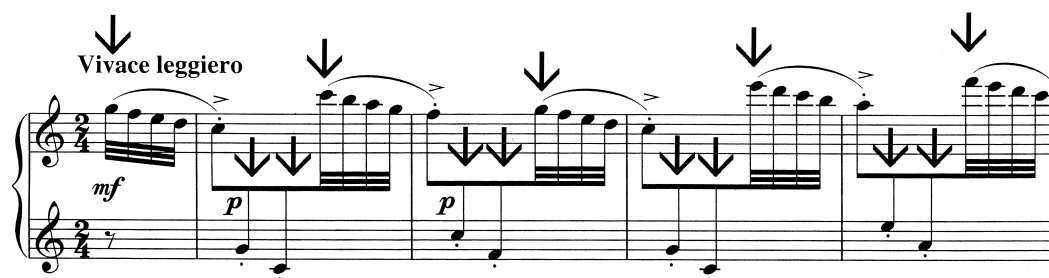


Figure 16: Dmitri Kabalevsky, "A Little Joke,"  
from *30 Children's Pieces*, Op. 27, mm. 1-4.<sup>66</sup>

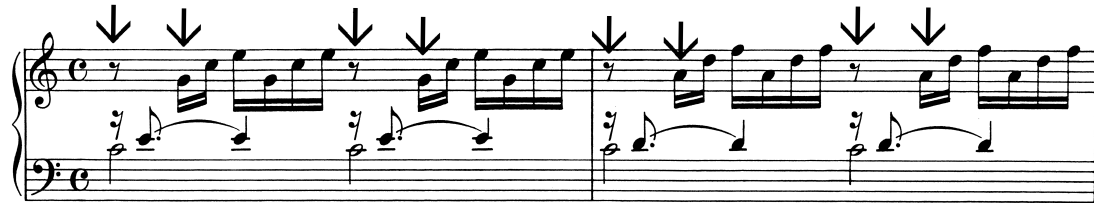
### *Six Notes per Stroke*

J. S. Bach, Prelude in C Major, from *The Well-Tempered Clavier*, Book I, mm. 1-2

This piece may be practiced in a similar approach to the "Little Study" by R. Schumann. Play all the notes simultaneously at first, then play notes in each hand together to become familiar with the notes. The right hand of this prelude contains arpeggiated chords with shifts in horizontal direction. The semi-elliptical (arm cycling) movement is used to adjust the hand position to accommodate the directional change. Thus, there are two

<sup>66</sup>Dmitri Kabalevsky, "A Little Joke," from *30 Children's Pieces*. New York: Boosey & Hawkes, 2001, 18.

small elliptical cycling in one Basic Stroke. The results are smooth phrasing and release between each stroke.



upper arm) include subtle combinations of horizontal, vertical, lateral, rotational, circular, semicircular, elliptical movements. These movements flow easily out of the fundamental coordination of the Basic Stroke, as does dynamic fluctuation. They are too complicated to be analyzed and described within this document. One of the major components of well-coordinated piano playing is the elliptical/cyclical movement of the arms. It generates momentum to play a succession of multiple notes, and it aids to move the hand and fingers smoothly to the designated keys, therefore it is suited for legato playing.

The main function of the Basic Stroke is to continuously release and refresh the muscles of the forearm and the upper arm, thus never accumulating muscular tension. Application of the pattern of the Basic Stroke is determined eventually by musical considerations – phrase length, tempo, frequency of rhythmic pulses or accents, etc. Personal taste can also influence the placement of the Basic Stroke. However, pianists should make an informed decision based on the style and the performance practice of each piece.

As with the exercises in the initial stages, any phrase can be broken down into fragments to be mastered individually, and then gradually linked together. Challenging figures such as rapid arpeggios, chords, and octaves can be mastered efficiently by this method. The basic cues (breathing, optimal alignment, balancing on the sitting bones, releasing the muscles, etc) should be applied at all times during the practice. The following pieces have been selected by the author to demonstrate the applications of the Basic Stroke in more advanced repertoire.

### *Placements of the Basic Stroke in the Classical Repertoire*

The Basic Stroke effectively produces articulations in Classical repertoire. The first quarter note receives a Basic Stroke, followed by a group of eighth notes with a slur played in one stroke, followed by two quarter notes with staccatos played with a thrust. The Basic Stroke should be applied to successive groups of notes with a slur as the composer indicated. For instance, the measure five and six, each contain a group of eight eighth notes with a slur. The melody in these two measures is not put together in one slur, but divided in two slurs. Alberti-bass accompaniment in the left hand is played with a Basic Stroke on the first beat, and also a smaller stroke on the third beat to refresh the arm movement. The Basic Stroke is used on the right hand in the seventh measure plays a grace note on the second beat. Quarter notes in the Classical repertoire can be articulated appropriately with the Basic Stroke.

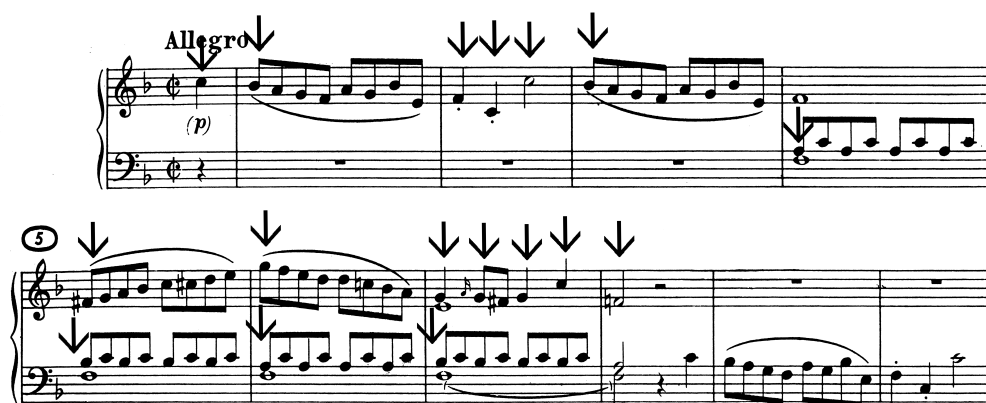


Figure 18: W. A. Mozart, *Piano Sonata in F Major*, K. 533/494, First Movement, mm. 1-8.<sup>68</sup>

<sup>68</sup>W. A. Mozart, *Piano Sonata in F Major*, K. 533/494, in *Mozart: Sonatas and Fantasies for the Piano*. Prepared from the autographs and earliest printed sources by Nathan Broder. Bryn Mawr, PA: Theodore Presser Co., 1960, 237.

The Basic Stroke is utilized in more subtle ways to construct phrases. The six-measure phrase theme receives several Basic Strokes with varying degree of importance based on the phrase structure. The most pronounced stroke is placed on the down beat of the fourth measure, to mark the peak of the phrase. The eighth notes grouped in two by a slur (in the second through fourth measure) should not be played exactly; the first groups should receive more dominance over the second group. For the groups of two eighth notes in the fourth measure, the first group on the down beat receives the most dominant stroke, followed by the third group.

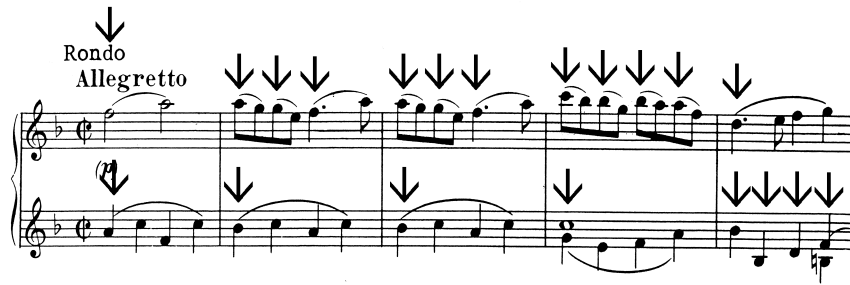


Figure 19: W. A. Mozart, *Piano Sonata in F Major*, K.533/494, Third Movement, mm.1-6.<sup>69</sup>

<sup>69</sup>W. A. Mozart, *Piano Sonata in F Major*, K.533/494, in *Mozart: Sonatas and Fantasies for the Piano*. Prepared from the autographs and earliest printed sources by Nathan Broder. Bryn Mawr, PA: Theodore Presser Co., 1960, 252.



### *Fingering as a Determinant for the Use of the Basic Stroke*

In his F minor *Mazurka*, Chopin wrote special fingering using the middle finger consecutively to articulate the last three notes in the antecedent phrase. These three notes can be artistically articulated with the subtle use of the Basic Stroke.

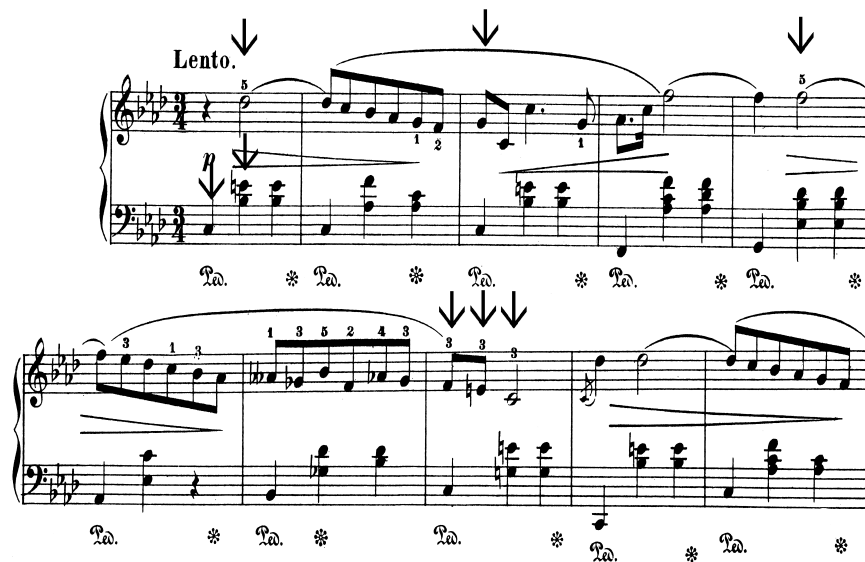


Figure 20: Frédéric Chopin, *Mazurka* in F Minor, Op. 63, No. 2, mm. 1-8.<sup>70</sup>

<sup>70</sup>Frédéric Chopin, *Mazurka* in F Minor, Op. 63, No. 2, in *Frédéric Chopin Mazurkas*. Edited by Carl Mikuli. New York: Dover, 1987, 122.

### *Basic Stroke used as a Preparation for Ornaments*

Any ornaments, even in the middle of a slurred phrase, can be prepared with a slight lift, followed by the Basic Stroke to help initiate the movement. Otherwise, the execution of ornaments is “jammed.” In the highly ornamented B minor *Mazurka*, the Basic Stroke is applied on every ornament although it may seem unnatural at first. Articulating ornaments effectively also set up the unique rhythmic pulse of *Mazurka*.

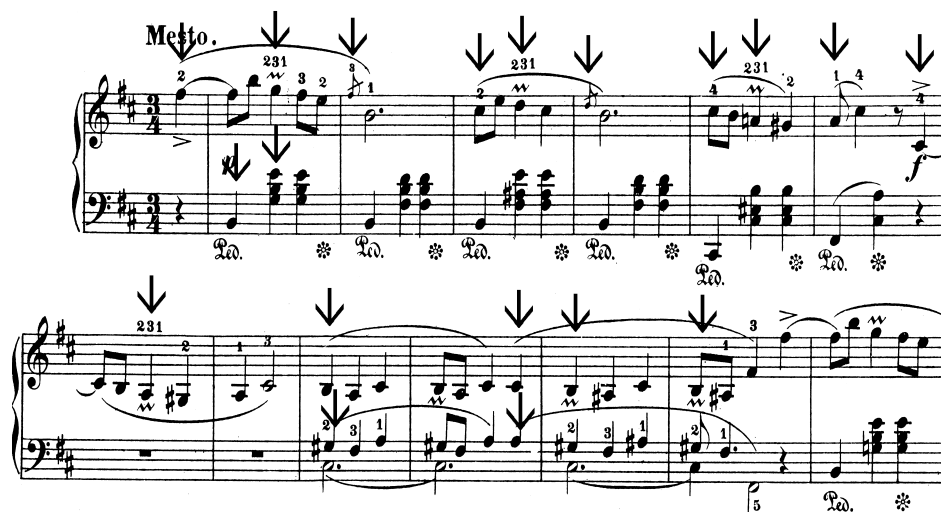


Figure 21: Frédéric Chopin, *Mazurka* in B minor, Op. 33, No.4, mm. 1-4.<sup>71</sup>

<sup>71</sup>Frédéric Chopin, *Mazurka* in B Minor, Op. 63, No. 2, in *Frédéric Chopin Mazurkas*. Edited by Carl Mikuli. New York: Dover, 1987, 62.

*Legato Playing in Sequential/Parallel Chords,  
Staccato under a Slur, Crossing Hands, Rapid Passages*

The beginning sequential chordal passages must be played soft and smoothly in one gesture, and their delivery can be challenging unless efficient technique is applied. The coordination of the hands and arms must reflect the musical gesture, so the slow-motion free fall must be placed strategically for a smooth delivery of these sequential chords. The Basic Stroke is applied on the F minor chord (second inversion) on the second and fourth beats in the first measure, and the highest chord on the second half of the first beat in the second measure.

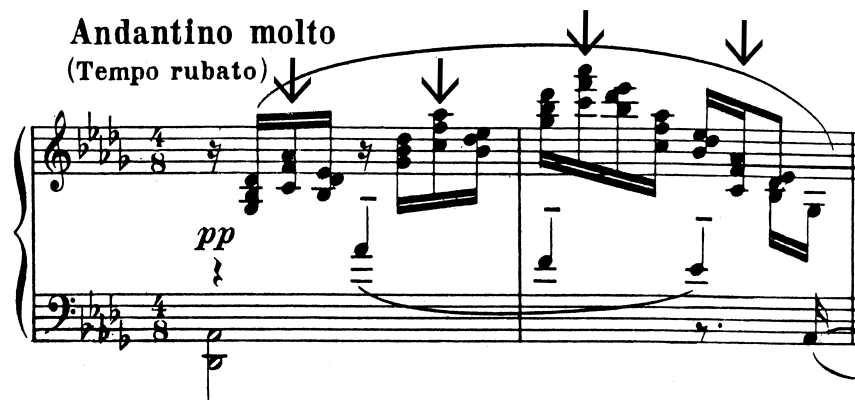


Figure 22: Claude Debussy, “Reflets dans l’eau,”  
from *Images*, Book I, mm. 1-2.<sup>72</sup>

<sup>72</sup>Claude Debussy, “Reflets dans l’eau,” from *Images*, Book I. Paris: A. Durand & Fils, 1905, 1.

Crossing hands (mm.22-23) can be easily done with the Basic Stroke application with the forearm moving in a curvilinear motion.

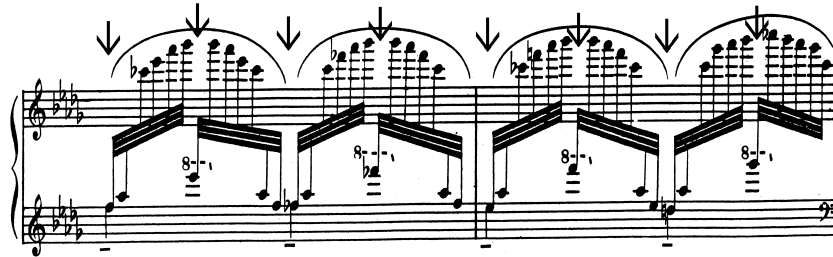


Figure 23: Claude Debussy, “Reflets dans l’eau,”  
from *Images, Book I*, mm. 22-23.<sup>73</sup>

The rapid sixty-fourth note passages (mm.24-25) moving up and down over an extended keyboard range (three octaves) are played with the Basic Stroke placed on the first note of each group. In the initial stage of learning, each group (G flat-C flat-B flat-A flat and C flat-G flat-A flat-B flat-C flat) should be practiced in one Basic Stroke, and then all three groups can be linked together to make one smooth gesture.

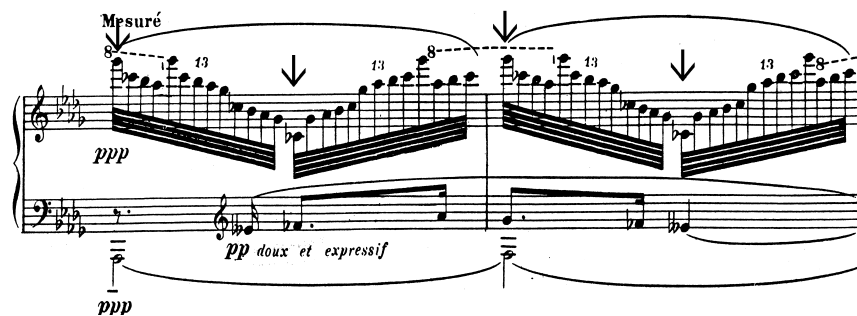


Figure 24: Claude Debussy, “Reflets dans l’eau,”  
from *Images, Book I*, mm. 25-26<sup>74</sup>

<sup>73</sup>Claude Debussy, “Reflets dans l’eau,” from *Images, Book I*. Paris: A. Durand & Fils, 1905, 2.

<sup>74</sup>*Ibid.*, 2.

The *humerus* bone in the upper arm should hang free from the shoulder joint in order to lead the forearm up and down the keyboard smoothly. It is important to note that this arm movement must originate from the *sternoclavicular* joint in the center of the chest. The *medial deltoid* is used as needed to lead the lower arm. However, it is released regularly and the upper arm and *humerus* are allowed to return to full release into gravity continually. It should also be noted that, in order to keep the *humerii* hanging with gravity (for optimal mobility of movement from the shoulder joint and for power), the torso should continually shift subtly on the sitting bones as it realigns behind the arms.

## CHAPTER X

### CONCLUSION

Playing the piano is a unique art which involves highly complex coordination of the body and the mind. Music enables us to express our complex thoughts and deep feelings that words cannot describe. Music is an expression of our life, our human experience. Piano technique is the foundational vehicle for the expression of music; therefore it should not be treated separately from music making. The belief that technique for its own sake has value independent of musical communication is ineffective or even harmful. Rather, like a language which enables us to think and communicate among ourselves, a properly understood technique allows pianists to feel the music and express that feeling in sounds.

Just as music involves the whole body, mind, and spirit, well-coordinated technique requires the coordination of these elements, and any block or disharmony among them can manifest as pain, discomfort and injury. With Lister-Sink's method, pianists can learn to appreciate the essence of music making, which is to create beautiful, resonant sounds through connecting with the instrument. The most rewarding experience of music-making comes when we take it as a way to learn about ourselves – how to connect with our bodies and minds, to listen to our inner selves, and to create harmony within and without.

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