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Reimagining Nineteenth-Century Piano Techniques from a Twenty-First-Century Perspective

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Abstract

This research reimagines a selection of nineteenth-century piano techniques, specifically those by Johann Nepomuk Hummel, Carl Czerny, Ludwig Deppe, and Theodore Leschetizky from a twenty-first-century perspective. These historical techniques were studied mainly through historical treatises or technique books where instructions on physical approaches, one of the most fundamental aspects of learning playing techniques, were focused on in detail. Through this, the resulting body and hand postures, positions, and movements were observed, and the implications of these researched techniques on musical aspects such as touches, tones, dynamics, and phrasing were studied, mainly on the modern piano and briefly on historical instruments.

In carrying out this study, musicological research served as the foundation, while different methodologies such as autoethnography and empirical analysis were used to extract findings from two different perspectives. A performer-based analysis from a first-person perspective was collected through autoethnography where the performer's input, feedback, and observations were documented, while quantitative data such as motion paths from a third-person perspective were obtained through motion capture.

The nineteenth-century techniques, reimagined and assimilated into modern piano playing, were showcased through the final recordings of performances where changes can be observed in aspects such as clarity, touches, dynamics, and phrasing. This thesis along with the attached demonstrations, musical examples, and recordings extends its contribution to both historically informed and modern piano

performances. It provides an additional aspect to consider in the preparation of historically informed performances (HIP) and opens the possibility for modern pianists to take inspiration from historical techniques. It also helps modern pianists understand the selected nineteenth-century techniques, and make more informed decisions when assimilating them, while offering a potential solution to playing historical keyboard instruments.

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Lastly, this PhD would not have been possible without the support of the Maynooth University John Hume Scholarship.

Introduction

I vividly remember one of my earliest moments of reading an interview with Jacob Helmann on the association of a beautiful, full singing tone, and *legato* on the piano with 'strange motions' made by the pianist's hands and fingers.[1] I was prompted by this revelation to question how these techniques differed in the past. The accumulation of these intriguing thoughts propelled me into the realm of piano techniques, initiating my exploration, and eventually leading to this PhD research on historical techniques.

This doctoral research delves into several selected nineteenth-century techniques, especially those of Johann Nepomuk Hummel, Carl Czerny, Ludwig Deppe, and Theodore Leschetizky, primarily through historical treatises and books by their students. The main aim of this research is to reimagine these nineteenth-century piano techniques from a twenty-first-century perspective and apply them on both historical and modern piano. The techniques explained in these treatises and technique books are closely linked to body movements, with some being taught through physical instructions, providing an entry point to learning the techniques and, at the same time, to observing the body movements of a pianist in relation to the techniques. The process and findings of this research cover topics such as the interplay between techniques and instruments, the roles and effects of the researched techniques, their implications on body movements and playing, and most importantly, the practical demonstration of researched nineteenth-century techniques through musical examples on both historical and modern instruments.

[1] Andrew Adams, 'Dorothy Taubman's Teacher: The Life And Writings Of Jacob Nicolai Helmann', *The American Music Teacher*, 62.6 (2013), pp. 30–34.

Chapter 1 of the thesis introduces the main aims and objectives of the research, and examines major existing literatures on piano techniques, tone production, body movements, and the different views on each of these matters. This chapter also discusses the various methodological approaches used in this research — including musicological research, autoethnography, and empirical analysis — that served to support the different perspectives of the findings. The three-step artistic process (practice, documentation, and production and dissemination) of the research is also explained, providing an overview of the research.

Chapter 2 begins with a preliminary screening of method books from the nineteenth century, providing a general idea and comparison of the techniques that emerged in the nineteenth century, as well as setting the timeframe of the research. It is then followed by the contextualisation of the selected pedagogues (Hummel, Czerny, Leschetizky, and Deppe) and their techniques.

Chapter 3 delves into the physical approaches and techniques of the selected pedagogues, identifying the body and hand posture, touches, techniques, movements, and concepts used by each of them. A comparison of the four selected techniques is also included at the end of the chapter.

The techniques discussed in Chapter 3 were then learnt and applied onto a modern piano, which is then presented through musical examples in Chapter 4 . This chapter presents findings of the third-person perspective by including motion graphs produced through the use of motion capture in tracking the hand movements of the

pianist (a role I take on in this research, apart from the researcher). It offers visual and empirical comparisons of each technique, presenting the differences in wrist and elbow movements between using my own existing techniques and historical techniques.

After the application of the researched techniques on a modern grand piano, Chapter 5 describes my artistic practice of applying the nineteenth-century piano techniques on historical instruments. It attempts to recognize the connections between techniques and instruments, revealing perspectives that are otherwise more difficult to realise on a modern piano. As part of this, recordings of performances on historical instruments were included throughout the chapter.

While some historical techniques can be seamlessly incorporated into modern techniques and instruments, others led to clear changes in playing styles or performance decisions. Chapter 6 discusses the possibility of combining prior experiences of historical techniques on historical instruments on the modern piano. The final performances of the three pieces used in this research are also attached in this chapter, providing musical examples with timestamps to guide the readers. Musical examples included in Chapter 4 to Chapter 6 of this dissertation can also be accessed by scanning the provided QR codes or by following the attached links.

The conclusion, Chapter 7 brings the thesis to an end by reiterating the research aim, revisiting the highlights, contribution, and impact of the research, and addressing the limitations and potential for further research.

While the researched techniques were considered from a twenty-first-century perspective, this dissertation does not seek to establish the authenticity of these techniques. Instead, this research focuses on the exploration of embodiment and practical application. Through that process, it endeavours to uncover new knowledge, providing a fresh perspective in playing nineteenth-century piano repertoire. This process was then examined from various angles, incorporating perspectives from motion capture data as well as that of the performer.

Bringing this project to fruition involved immersing myself deeply into the heart of historical techniques, necessitating diligent practice, embodiment, and performance of these techniques. Simultaneously, I scrutinised my existing set of techniques, exploring the potential for expanding my playing capabilities through the insights gained from the researched historical techniques. Through the artistic process, this research has demonstrated that the nineteenth-century techniques result in different body movements in comparison to their modern counterparts, a phenomenon attributed in part to the characteristics of historical instruments. The research also explored the contextually informed transfer of knowledge and application of concepts from the researched techniques onto the modern piano.

The rapport between research and practice was shown through the discussions included in the thesis, tying together the musicological knowledge of nineteenth-century techniques and its application on different instruments. Revisiting and re-establishing these researched techniques led to knowledge such as their effects in practice and the reasoning behind the resulting body movements in relation to techniques and instruments. The findings of this research take into account the

importance of historical and modern instruments, contributing to both historically informed and modern mainstream piano performances, as well as to the musicological dialogues in scholarly research.

Chapter 1 Introduction and Fundamental Groundworks

1.1 Introduction

'Music is technique. It is the only aspect of music we can control'.[2] This is a quote by Nadia Boulanger that Reginald Gerig borrowed in the opening of his book *Famous Pianists and Their Piano Techniques.* Piano techniques have indeed played an important role in every pianist's musical journey, where it covers aspects from the foundational body and hand positions and movements, to the touch and sound production. As such, many famous pianists and pedagogues have their own opinions about piano techniques.

To Josef Hofmann, technique is made up of many different ways of playing or executing including scales, arpeggios, chords, double notes, octaves, *legato*, various *staccato* touches, as well as dynamic shadings, which he thought were all necessary parts of technique.[3] He also asserted that 'a pianist without technique is like a pleasure traveller without money.'[4] In Hofmann's opinion, 'technique represents the materials side of art, as money represents the material side of life'.[5] He further stated that people who have acquired significant wealth would realise that money is only one of the extraneous details that may or may not contribute towards real content in life.[6] Technique is surely only one of the many aspects in piano

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[2] Reginald R. Gerig, *Famous Pianists & Their Technique*, New ed. (Indiana University Press, 2007), p. 1.
[3] Josef Hofmann, 'Piano Questions' Answered in *Piano Playing with Piano Questions Answered* (Theodore Presser Co., 1920), p. 3 <https://dn790000.ca.archive.org/0/items/pianoplayingwith00hofmuoft/pianoplayingwith00hofmuoft.pdf#page=137.11>.
[4] Josef Hofmann, 'Piano Questions Answered', p. 75.
[5] Josef Hofmann, 'Piano Playing' in *Piano Playing with Piano Questions Answered* (Theodore Presser Co., 1920), p. 80 <https://dn790000.ca.archive.org/0/items/pianoplayingwith00hofmuoft/pianoplayingwith00hofmuoft.pdf>.
[6] Ibid., p. 80.

playing or performance. However, without it, no good performance could be executed. Just as Joseph Lhevinne stated in his book:

> Everyone knows that technic is only a means to an end, but without this means one does not reach the end. There may not be anything very beautiful about the great, grimy engine of an automobile, but if one would get to the journey's end — to the dreamland of wonderful trees, gorgeous flowers and entrancing beauty — he must have the means. You must travel just so many scale miles and arpeggio miles and octave miles before you arrive at the musical dreamland of interesting execution and interpretation.[7]

Arthur Schnabel asserted that:

> Technique is never an end, you know that. Mere dexterity is not sufficient — I can try it with any street boy, he will execute a glissando at one — and if he has enough sitting capacity, he will thunder octaves as rapidly as possible for a full hour. That has nothing to do with music. It is athletics.[8]

While the content page of technique books usually encompasses body and hand positions to tone and pedalling or more, techniques in piano playing have become a broad term that encompass a wide range of skills, methods for execution and are related to many other aspects of piano playing for modern pianists. The

[7] Josef Lhevinne, *Basic Principles in Pianoforte Playing* (Dover Publication, 1972), pp. 83–84.
[8] Arthur Schnabel, *My Life and Music* (St Martin's Press, 1964), p. 126 <https://archive.org/details/mylifemusic0000schn/page/n247/mode/2up>.

techniques taught today have undergone significant transformation and modification through generations of pedagogues and pianists.

Looking back, music in the nineteenth century had also undergone a considerable evolution in style, as Catherine Guichard wrote:

> The waning decades of the nineteenth century were bristling with revolutionary ideas but still anchored by the roots of tradition. Rich in vibrant Romanticism, especially in literature and poetry, the century was in quest of new forms of expression. Painting broke loose from old conventions and embraced an impressionist style. Artists probed and broadened their techniques, and the new paintings were a wonder. Music seemed to limp behind other arts. Then, suddenly, harmony took bold steps, and French music in particular took off, innovating in timbres, rhythms and audacious harmonic combinations.[9]

The development of techniques also went hand in hand with the evolution in style mentioned by Guichard. To gain a deeper understanding of the changes in techniques, historical techniques were applied to both historical and modern instruments over the course of this study. They were first studied through short sections of a piece on a modern piano, and later on a fortepiano. They were then incorporated into modern piano playing, where they were adapted and combined with my own techniques to present recordings of the selected pieces. Through this, the objectives of this research include:

[9] Catherine Guichard, *Marie Jaell: The Magic Touch, Piano Music by Mind Training*, trans. by Cyrille de Souza (Algora Publishing, 2004), pp. 5–6.

- embodying the selected historical techniques
- observing the resulting effects on body movements
- understanding the roles and functions of nineteenth-century techniques through historical instruments
- and ultimately applying and integrating historical techniques on the modern piano.

These objectives were set out to answer the initial research questions such as:

- How are nineteenth-century techniques different from present-day techniques?
- Do they result in a different outcome in terms of body movements?
- What roles do nineteenth-century techniques play and how relevant are they to modern piano playing?
- What can we learn from these techniques?
- How are they useful in our modern-day performances?

By implementing the aforementioned objectives and probing these questions, this research looks back to move forward, bringing us on a journey of discovering valuable information and knowledge that would transform perspectives of modern pianists in performing nineteenth-century repertoires.

In this thesis, I use terms such as ‘modern techniques’, ‘my techniques’ and ‘historical techniques’ to distinguish the different types of techniques that are under discussion. While ‘historical techniques’ in this thesis would mean the researched nineteenth-century techniques, mainly those by J.N. Hummel, Carl Czerny, Ludwig

Deppe, and Theodore Leschetizky, I wish to clarify ‘modern techniques’ and ‘my techniques’ with further context to avoid misunderstandings or broad generalisations. It was already demonstrated in the opening of this chapter that techniques are defined and conceived differently by pianists and pedagogues, depending on their perspectives, and we must acknowledge that it is almost impossible for us to determine techniques in a rigid way. For example, while Gerig compiled definitions of techniques by pedagogues and pianists such as Tobias Matthay, Josef Hofmann, Ferruccio Busoni, Thomas Fielden, Sidney Harrison, Ivan Galamian, to name a few, he noted that they did not agree on a specific road to learning good interpretative techniques.[10]

Leon Fleisher (1928–2020) who takes an unconstrained approach to techniques said:

> It's your musical ideas that form or decide for you what kind of technique you are going to use. In other words, if you are trying to get a certain sound, you just experiment around to find the movement that will get this sound. That is technique.[11]

Charles Rosen (1927–2012) also said,

> … there is no agreement on how to hold the hand at the piano: most children are taught to curve their fingers and place the wrist in a middle position, neither too low nor too high, but of course playing rapid octaves generally demands a higher position for wrist and arm. Horowitz played with his

[10] Gerig, *Famous Pianists & Their Technique*, pp. 1–3.
[11] Leon Fleisher, ‘About Practicing and Making Music’, *Clavier*, 2.4(1963), p. 12, cited in Gerig, *Famous Pianists & Their Technique*, p. 4.

> fingers stretched flat and José Iturbi used to hold his wrist below the level of the keyboard.
>
> This variety is the reason that almost all books on how to play the piano are absurd, and that any dogmatic system of teaching technique is pernicious. (Most pianists, in fact, have to work to some extent in late adolescence to undo the effects of their early instruction and find an idiosyncratic method that suits them personally.) Not only the individual shape of the hand counts but even the whole corporal shape. That is why there is no optimum position for sitting at the piano, in spite of what many pedagogues think.[12]

Therefore, it could be said that almost anything and everything is possible today, and that it is difficult to define what constitutes modern piano techniques in the twenty-first century. Furthermore, modern pianists could be easily influenced by other musicians, pianists, recordings, or other various aspects due to the convenience and accessibility where one can watch recordings of renowned musicians with just a few clicks. It is also very common for pianists to learn from more than one teacher, attend masterclasses, workshops, and courses, opening pianists to a variety of diverse playing styles. Technique in modern piano playing is broad, and at the same time, personal to each pianist, depending on their background, surroundings, experiences, hands, fingers, and body characteristics.

However, the term ‘modern techniques’ is still used for the purpose of differentiating techniques from those of the nineteenth century in this research. It

[12] Charles Rosen, *Piano Notes: The World of the Pianist* (Free Press, 2002), pp. 17–18.

refers to methods of touch and tone production, where movements, positions and postures that are freer, and not as restricted as those found in historical treatises. In this thesis, 'modern techniques' also refers to techniques that utilise more parts of the body (such as the arm, shoulder, elbow, back, or even the whole body) beyond just the fingers and hands on the modern piano. For example, circular wrist or arm movements, large hand lifts, and other movements produced to acquire one's desired sound. 'My techniques', on the other hand, are the approaches that I learned and used throughout the years that were mainly influenced and passed down to me by different teachers, which may also be an amalgamation of several different approaches.

As a child, I did not recall paying much attention to piano techniques during my early years of attending piano lessons, and only followed basic rules such as curving the fingers, not collapsing the finger joints, and not sinking the wrist. More techniques were then introduced and taught to me, mainly by two of my teachers, Chew Beng Lin, who tutored me for about 7 years and Dr Loo Fung Chiat who was my piano lecturer for four years during my undergraduate studies in Malaysia. Loo was the one who helped me with my body posture and taught me the use of body and hand movements in piano performance and how they can help in sound production.

While both of these teachers are based in Malaysia, they came from different backgrounds — Chew studied in the United States, while Loo completed her studies in the UK. Chew's lineage could be traced back to Arthur Schnabel as her professor studied under Leon Fleischer, Schnabel's student. This could then be traced back to Czerny, as Schnabel learned from Theodore Leschetizky, one of Czerny's students. However, Chew emphasized that the techniques used by her and her professor have

evolved and were adjusted to cater to the needs of their hands and fingers. She was also taught to play with the most natural position without any tension and utilised the Alexander technique for better movements and body positions against the instrument. Therefore, even if her techniques were traceable to Arthur Schnabel, techniques taught to her have evolved as they were modified to suit different needs.

In terms of playing techniques, Chew taught me in producing a variety of tone colours. She also taught me to refine my playing through technical exercises and approaches such as playing in dotted rhythms, and ways to overcome limitations of a small hand, for example, rolling the hand when playing large or arpeggiated chords. These teachings that focused on the resulting tones rather than the initiatory body movements, honed my listening skills and the ability to refine my playing as a pianist. However, I recall that the stiffness of the body and hands was mentioned several times during our lessons. Studying under Chew for seven years has surely influenced my playing approaches and techniques either consciously or unconsciously.

While different tone colours and technical exercises, such as practicing with accents on different beats, were also taught to me by Loo, the use of body, and the relaxation of the hand and arm were more frequently mentioned. The use of body weight to play loud chords, the space one needs to emphasize important notes, the use of hands such as hand lifts, hand weight, elbows, as well as the seating positions that make them possible were often discussed during my lessons with Loo. These body and hand movements, especially in the preparatory stages (actions and movements before or when playing the notes), were mostly taught in relation to

sound production, and specific qualities that we seek to apply to the repertoires at hand.

I also further pursued a one-year master's studies, during which I had piano lessons with Dr Fionnuala Moynihan, where hand movements were at times suggested, for example in using the whole arm to execute melody lines. Apart from my formal music education, I have also attended masterclasses with various pianists from different countries throughout the years of my music studies. While these experiences are also crucial to my development, I believe that my techniques were mainly learned through Chew and especially Loo.

In general, I would prefer a seating position that is not too low. When seated, my right foot would naturally be positioned forward with the left foot at the back, unless the *una corda* is in use. My fingers are curved, and my hands would produce movements depending on the sound quality I seek. For example, circular movements are commonly used for longer melody lines, while striking (or almost a throwing action) using the hands are for more percussive tones, and movements such as lifts are usually found at the end of a phrase. In loud sections, hand and body weight are employed in conjunction with an inclined back where I can direct all the force and energy into the keys, resulting in a more powerful way of playing. While it would not be easy to describe my own sets of approaches to playing purely through words, these techniques are demonstrated through short videos in Chapter 4 and will also be used as a reference to compare the different approaches in this research.

As this thesis focuses on my experience as a twenty-first century pianist with a background in modern piano, engaging with nineteenth-century piano techniques and studying their implications, a multi-modal approach in the methodology is required with musicological research as its foundation. In investigating different facets of the artistic experience, this research considers and utilizes the aspects introduced in the following subchapters (1.2 and 1.3) collectively.

The next section will start with a discussion of theoretical and textual literature, which provides the necessary knowledge and foundation to conduct this research. Relevant perspectives and methodological approaches were also explored to demonstrate their suitability, and to inform the methodological decisions and artistic process of this research.

1.2 Examination of Existing Literature

Discussions regarding piano techniques vary depending on the time as well as the location and have gained much attention among the music community. In researching piano techniques, important sources commonly include historical treatises or technique books that explain aspects and concepts of piano techniques. While historical treatises are not often used by music teachers today, they are still studied and researched by scholars. For example, Miriam Vanoni researched the technique and expression in Carl Czerny's teachings and mentioned that his treatise was not only for fast training of the fingers, but also about training to perform expressively.[13] Another recent research by Christina Kobb has reconstructed

[13] Miriam Conti Vanoni, 'Technique and Expression in Carl Czerny's Teaching: A Critical Study of Czerny's Piano-Forte School, Opus 500, Demonstrating the Direct Relation between Mechanical Teaching and Expression in Performance' (unpublished DMA dissertation, Boston University, 2017), p. 235 <https://hdl.handle.net/2144/20893> [accessed 2 May 2024].

postures, motions, and techniques of the Viennese School by researching treatises from Vienna, France, and England, with one of her main sources being 'A Complete Theoretical and Practical Course of Instructions on the Art of Playing the Piano Forte' written by Johann Nepomuk Hummel, a student of Mozart.[14] Kobb observed that the body movements, postures, and techniques were very different in the 1820s, and that the 'Viennese posture' and technique also led to different technical solutions for difficult excerpts.[15]

In her dissertation 'Practical Hummel: A Guide for Pianists and Piano Teachers on How to use Johann Nepomuk Hummel's Treatise today', Katherine Landowski explained the usefulness of Hummel's treatise and how it can be used by pianists or piano teachers in the modern day. She also included a comparison of Hummel's treatise with the *Piano Adventures Lesson Book*,[16] and explained how Hummel's approach of playing trills is suitable to be applied on Mozart's pieces.[17]

Apart from techniques that were researched using treatises, the thesis by Jeongsun Lim also used treatises as a main source to study aspects that could affect the quality of tone production on the piano, in which he discusses various techniques ranging from the use of finger attack and still upper arm to the use of arm weight and

[14] Rachel Nuwer, 'Playing Mozart's Piano Pieces as Mozart Did', *New York Times*, 20 July 2015 <https://www.nytimes.com/2015/07/21/science/playing-mozart-piano-pieces-as-mozart-did.html> [accessed 24 December 2019].
[15] Christina Kobb, Viennese Piano Technique of the 1820s and Implications for Today's Pianists, *Music and Practice*, 4(2019), doi:10.32063/0403.
[16] Natalie Katherine Landowski, 'Practical Hummel: A Guide for Pianists and Piano Teachers on How to Use Johann Nepomuk Hummel's Treatise Today' (Unpublished DMA dissertation, University of Iowa, 2018), doi:10.17077/etd.8w07iluk.
[17] Landowski, 'Practical Hummel', p.135.

relaxation. He also relates the evolution of techniques to the improvements made on the instrument (piano).[18]

The above scholarly literatures made good use of these treatises to establish connections between the treatises, and of the current trend in piano playing including pedagogical methods, techniques, and tone quality through musicological discourse. Furthermore, research has also been carried out on the effects of different techniques. A study by In-Seol Chung and others between pianists who underwent 'weight playing' and 'traditional' playing techniques found that, while weight playing pianists produce lesser wrist motions than traditional pianists when playing exercises and classical music, they showed greater flexion activity in playing arpeggios and trills.[19] Although the two different techniques were not defined or explained, the study demonstrated the effects in movements produced using the different techniques. Through this, I cannot help but wonder how the movements of historical piano techniques differ from my own techniques that I learnt in the twenty-first century.

While movements were fundamental to the correct playing approach during the classical period, towards the late-nineteenth century, they were not just a way for executing correct technique, but a means to augment the produced tone as well. It was mentioned in an interview that Jacob Helmann, teacher of Dorothy Taubman,[20]

[18] Jeongsun Lim, 'Attitudes and Thoughts on Tone Quality in Historic Piano Teaching Treatises' (unpublished DMA dissertation, University of South Carolina, 2018) <https://scholarcommons.sc.edu/etd/5024/> [accessed 15 December 2020].
[19] In-Seol Chung and others, 'Wrist Motion Analysis in Pianists', *Science and Medicine, Inc*, 7.1 (1992), pp. 1–5, <https://www.jstor.org/stable/45440445> [accessed 19 December 2024].
[20] Dorothy Taubman is known for developing 'The Taubman Approach', a method that can help pianists overcome technical limitations and playing related injuries. See The Golandsky Institute, <https://www.golandskyinstitute.org/resources/#the-taubman-approach> [accessed 16 June 2025]

taught his students a distinctive technique for wrist motion that would be familiar to many pianists today. The technique received the attention of the legendary pianist Anna Essipova (1851–1914) after their first public demonstration as she did not recognize the strange motions but observed that they had 'an unusually beautiful, full singing tone and an amazing *legato*'.[21]

In terms of composition, it can also be argued that some techniques were developed in response to the compositions of the time. Stephen Hough mentioned that Chopin's first etude from op. 10 was 'more than a handful' as the fingers alone were not sufficient to execute the passage and that the use of the wrists and arms were required.[22] Thus, one can argue that techniques and compositions are two main elements that contribute to the evolution of body movements and gestures, possibly affecting the sound produced on a piano as well.

I also believe that the use of techniques and postures by pianists could be heavily influenced by the teachers and mentors from whom they learn. However, after the passing of the baton through generations, as well as the evolution and advancements in instruments, compositions, and playing styles, some of the modern techniques used in the twenty-first century are quite different from the instructions in historical treatises. Therefore, it is not surprising to see artist researchers use historical treatises as reference sources in historically informed performance.

[21] Adams, 'Dorothy Taubman's Teacher', p. 31.
[22] Stephen Hough, 'Chopin and the Development of Piano Technique', Stephen Hough, n.d. <http://stephenhough.com/writings/selective/chopin.php> [accessed 14 December 2019].

Tom Beghin, when studying the difference between a Viennese and French piano hammer mechanism, also considered the difference in piano technique. He compared two sources, the *Brief Remarks on the Playing, Tuning, and Maintenance of Fortepianos Made in Vienna* by Nannette Streicher, and Louis Adam's *Méthode de piano,* comparing the seat, arm, hand, and finger instructions between the two important figures, and found crucial differences between both instructions.[23] Natalia Strelchenko who studied the piano techniques of the early nineteenth century not only made use of historical treatises, but also built a replica of a chiroplast machine in one of her projects and used it to practice Kalkbrenner's *Le Fou.* Through that, she noted that placing the wrist position on the bar led to significant changes in one's technical approach.[24]

Historically informed performances (HIP) often include all aspects of historical accounts, including composer's manuscripts, correspondence, historical materialities, and are usually performed on historical instruments; in recent years, however, books that bridge historical performance practices together with modern piano playing are gaining more popularity. For example, in 2021, David Breitman published *Piano-playing revisited: What modern players can learn from period instruments*, in which he demonstrated how modern players can learn from historical instruments, presenting the difference between them, and explaining aspects from touch to pedalling using treatises by C. P. E. Bach, Quantz, Leopold Mozart, and

[23] Tom Beghin, *Beethoven's French Piano: A Tale of Ambition and Frustration* (The University of Chicago Press, 2022), pp. 56–62.
[24] Natalia Strelchenko, 'Style Brillante: Piano technique in Performance Practice of early 19th century. Critical reflection', (unpublished research report, Norwegian Academy of Music, 2011), p. 51 <http://hdl.handle.net/11250/2560103> [accessed 15 November 2024].

Turk, to name a few.[25] The four central chapters on Haydn, Mozart, Beethoven, Chopin, and Schubert, especially, were reviewed by John Irving to be 'detailed and extremely revealing case studies of piano works' and to 'offer much valuable insight on crucial interpretative aspects of their piano works that only really reveal themselves when faced with the challenges posed by early pianos'.[26]

Donna Louise Gunn also published 'Discoveries from the fortepiano' in 2016, where she included useful information on various aspects of the fortepiano from the instrument, techniques, dynamics, touch, tempo, and more.[27] Her musical examples were also presented in several versions such as the modern interpretation and the fortepiano version. These insightful books nourished my own research through their knowledge of performance practice and performing techniques, supporting my exploration into the interplay between historical and modern instruments.

Despite the extensive literature that uses historical treatises as a source, as well as works such as those by Gunn and Breitman that explore the connection between modern piano and historical piano, not much has been done in terms of realising historical techniques on a modern piano. Even though Kobb reconstructed and performed Viennese techniques on a historical piano, and Beghin explained and analysed the difference between Viennese and French techniques in discussing Beethoven's piano sonatas, the integration of these nineteenth-century historical

[25] David Breitman, *Piano-Playing Revisited: What Modern Players Can Learn from Period Instruments* (University of Rochester Press, 2021).
[26] John Irving, 'Learning from Period Pianos', *Early Music*, 50.1 (2022), pp. 136–37 (p. 136), doi:10.1093/em/caac005.
[27] Donna Louise Gunn, *Discoveries from the Fortepiano: A Manual for Beginning and Seasoned Performers* (Oxford University Press, 2016).

techniques into modern piano playing remains unexplored. These historical techniques published nearly two centuries ago precede the modern techniques we are using to perform the very same repertoires that we are still playing today. Although some techniques may no longer be applicable due to the advancement of instruments, there are also invaluable techniques, approaches, and concepts that are worth revisiting and can contribute to the field of musicology and performance, but were lost to time. The selected sources contained the most direct and original information for historical techniques of the selected pedagogues and provide insight into their performance attitude. These mentioned gaps deserve a deeper exploration especially in practice, rather than simply being discussed.

In realizing historical techniques and in comparing them, the touch and tone, as well as the body movements of the pianist are crucial aspects to be examined, despite being placed uniquely between two opposing views on music research — that of empirical and performer focused artistic research. Sciences and arts are commonly known to be two different disciplines and are often perceived as opposite sides of a spectrum. When looking at the matter of playing techniques, tone production, and body movements of a pianist through their respective lenses, scientists and musicians focus on different aspects of the subject and this has raised disagreements between the two groups for almost a century. This section will uncover the different views on this matter through arguments by academicians, musicologists, and scientists to provide further context to this research.

1.2.1 The Scientific Perspective

Otto Ortmann (1889–1979), one of the pioneers in studying the touch and tone of a pianist, set the foundation for subsequent studies in the later period with his book *The Physical Basis of Piano Touch and Tone* (1925). He wrote that even for the more 'artistic' or 'poetic' touches of piano playing,

> […] if they have any physical effect whatever upon the playing, and this, after hearing our best performers, can hardly be doubted, then this effect, too, must be explained in variations in key-speed and time-interval, for we have no other physical variable than these two.[28]

Ortmann deduced that the effect of expressions such as '*con amore*' and '*affettuoso*' originate from two main factors: the key speed and time interval. In his experiment, he recorded the variation of key speed by attaching a piece of smoked glass at the side of the key and recorded the tracings of a tuning fork that would produce sine curves showing the variation in speed through the distance of the wavelength.[29] He said that '[i]t follows that an increase in key-speed means an increase in dynamic tone value; the faster the key is depressed, the louder is the resulting tone' after studying the key-movement played using various weights.[30] He also explained that neither rigid or relaxed arms, nor the difference in hand positions such as high or low wrists, flat or curved fingers would cause major differences in terms of key speed. He concluded that 'when intensity is controlled or equal there is absolutely no difference between key-movement initiated with a rigid arm and key-

[28] Otto Ortmann, *The Physical Basis Of Piano Touch And Tone* (E. P. Dutton & Co, 1925), p. 53.
[29] Ortmann, *The Physical Basis Of Piano Touch And Tone*, p. 16.
[30] Ibid., p.18.

movement initiated with a relaxed arm.'[31] He also observed that only a slight intensity difference was seen, with curved fingers showing more intensity,[32] while the results of using different wrist positions were inconclusive as there were occasional slight differences in key speed that were found to vary between positions.[33] Ortmann stated that different tone qualities such as dry, thump, shallow, etc. are a result of the variation of loudness, which is ultimately a result of differences in key speed.[34] He believed that,

> [t]he meaning of a phrase, its poetical content, is conveyed to the auditor, not by some individual, even mysterious, touch of the player, but by appropriate variations in the speed with which the latter depresses one or more piano keys. Consequently, the control of key-speed, dynamically and agogically, becomes of vital importance, since it is the technical means of securing artistic effects.[35]

In fact, it was the effect of percussive and non-percussive touches that displayed differences in key speed. In Ortmann's experiment, a percussive touch describes a moving finger that strikes the key, while a non-percussive touch describes a resting finger on the key before descent. He mentioned that when '[i]nterpreting the curve, we find that the key begins its descent with a sudden jerk. Thereupon, its speed decreases and again increases. This gives us an interesting insight into the nature of percussive touch'.[36] In Ortmann's experiment, percussive

[31] Ortmann, *The Physical Basis Of Piano Touch And Tone*, p. 19.
[32] Ibid., p. 23.
[33] Ibid., p. 24.
[34] Ibid., p. 26.
[35] Ortmann, *The Physical Basis Of Piano Touch And Tone*, p. 55.
[36] Ortmann, *The Physical Basis Of Piano Touch And Tone*, p. 21.

touches showed greater key speed than the non-percussive touches,[37] hence louder tones were produced. From an empirical perspective, the key speed, the hammer speed, the weight put into playing a key were what contributed to the artistic effects in sound on the piano.

Sir James Jeans (1877–1946) who made many major contributions on mathematical physics also wrote the book *Science and Music* (1937), where he shared a similar viewpoint when demonstrating his scientific perspective of analysing piano tone. He wrote:

> [...]in striking a single note, the pianist has only one variable at his disposal — the force with which he strikes the key; this determines the velocity with which the hammer hits the wires, and once this is settled, all the rest follows automatically. It is not, however, a legitimate inference that single notes can differ only in loudness; differences in the strength of striking will also produce a difference in the proportion in which the various harmonics enter, and this will naturally alter the emotional quality of the note. For instance, very hard striking increases the relative proportion of the upper harmonics and so imparts dissonance and harshness as well as mere loudness. It seems natural to associate the resulting sound with anger, disappointment or despair. But it remains true that all the shades of tone which the pianist can get out of one note form one linear sequence only, this corresponding to the different speeds with which the hammer can strike the wire; and it is quite certain that the human emotions cannot be placed in a single linear sequence. Also it

[37] Ibid., p .22.

> seems clear that, so long as he confines himself to striking single notes, the greatest virtuoso has no greater range of effects at his disposal than the child strumming at its five-finger exercises.[38]

Jeans raised three issues in his paragraph above — the difference in key speed, difference in harmonics due to the applied forces, and the playing of single tones — all of which play a part in creating the various shades of tones on the piano. He agreed with Ortmann's conclusion that the only variable in playing would be the force when striking the key, which would result in the velocity of the hammer. Even more so, he concluded that it is not possible to put emotion on a linear sequence in relation to key speed and loudness. Therefore, Jeans ended the last section of 'piano tone' in his book by mentioning the experiment performed by Hart, Fuller, and Lusby who showed no visible difference in terms of sound curves when single notes were played by well-known virtuosi and by letting a weight fall on the key.[39]

However, the falling weight creating the same sound as the virtuosi does not fully address the question at hand — the knowledge behind creating 'the' sound that we seek. I believe that both musicians and non-musicians understand and realize that after one plays a key, the rest that follows is a result of the piano mechanism such as the key moving the hammer, the hammer hitting the string, the vibration of the string creating sound waves that ultimately enters our ears. Setting a weight and letting it fall on the key to match that of a pianist is easy. However, the inverse — hearing a certain 'loudness' of tone played by a weight or other means, then attempting to

[38] James Hopwood Jeans, *Science & Music* (New York, The Macmillan Company; Cambridge, The University Press, 1937), pp. 98–99 <http://archive.org/details/sciencemusic00jean> [accessed 21 October 2022].
[39] Jeans, *Science & Music,* p. 99.

achieve the same sound by hand — would be more difficult, especially if one has not undergone sufficient training on piano playing, and is without any reference on positions, movements, or techniques. This is where techniques, body movements, and gestures come into play. With prior training, having learnt the different positions and approaches of the fingers, arms, hand lifts, body, weight, and many more, pianists can almost easily achieve the required sound as they are able to remember the kinaesthetic sensations linked to producing the resulting sound.

While Jeans agreed with Ortmann's concept of the hammer speed, he also mentioned that loudness is not the only effect. A correlation can be made between the various proportions of harmonics heard and the force exerted. In his experiment of playing the same note in three different measures: *pp*, *mf*, and *ff*, the result showed that an increase in force on the piano key would lead to more upper harmonics being heard.[40] In other words, the timbre of the sound would change according to the force exerted as timbre is characterized by the harmonic content of a sound. While the loudness of a tone can be more easily studied, the timbre of a tone would need a more elaborate study, not to mention timbres of chords or phrases. Jeans's experiment on the differences in timbre shows that a plurality of tones, apart from loudness alone, can be observed when different forces are exerted on the keys, even though they can be closely intertwined with loudness. With the increase of force exerted on the keys, more harmonics from the higher octaves would be present and therefore produce a harsher sound. This may accord with the findings in Ortmann's book, where virtuosi or piano teachers who were asked to determine the tone quality

[40] Jeans, *Science & Music,* p. 97.

specified as forced, harsh, ugly, or thumped tones, chose those that were executed with great key speed.[41]

Jeans also mentioned that if one is constricted to only playing one note at a time, he would not be any greater than a child strumming his five finger exercises.[42] Therefore, studying these tones note by note would not be representative of a performance setting. The study of single tones cuts off the fundamental connection between each tone and subsequent or previous tones, limiting one's perspective to only one tone and disregarding the bigger picture such as phrases or sections. It is exactly these issues — phrases and the connection between notes — that require movements or gestures. As Ortmann said, it is difficult to portray tone quality in one single note, and doing so rather requires a combination of tones.[43] This also meant that a purely empirical sound study will not be best suited for this research.

Ortmann and Jeans's studies were carried out from the perspective of a scientist, narrowing down the variating subject to the speed of the hammer-key, and focusing on the mechanism of the piano. Their conclusions were that the key-hammer speed affects the resulting sound. In Ortmann's opinion, as long as one puts in an appropriate amount of force that would result in a certain key speed, a similar sound would be achieved. Jeans's study goes further than Ortmann's work as he was able to show the fundamental and harmonic content of a tone, showing differences in terms of timbre between tones being played with different loudness.

[41] Ortmann, *The Physical Basis Of Piano Touch And Tone,* p. 26.
[42] Jeans, *Science & Music,* p. 99.
[43] Ortmann, *The Physical Basis Of Piano Touch And Tone,* pp. 25–26.

However, just as there are two sides to every coin, it is common to have opposing views. Shen Li and Renee Timmers asked that researchers consider the question: 'Why do students and teachers repeatedly work on different touch types in piano lessons and experiment with them, focusing on one piano tone or chord, even though this would seem to be pointless from the acousticians' viewpoint?'.[44]

1.2.2 The Artistic Perspective

It is not that musicians intentionally disregard the scientific perspective, but rather they tend to approach the issue from another angle, departing from a different viewpoint and examining each aspect with a different approach. Scientists often examine the elements that can be quantified and analysed, such as Ortmann's study of the speed of the hammer and the loudness of the sound produced. However, tone production is not a singular experience for musicians, but a 'Gestalt', where the approach used and the product of notes and tones intertwine with other less easily quantifiable factors, such as sensation, perception, internal and external feelings, and more. While musicians and musicologists may not agree with extracting information from the sound empirically without considering the performer's perspective, I believe pianists understood the undeniable science behind hammer-speed and loudness, and thus, the tone qualities are also grounded to the scientific concept of hammer velocity to an extent.

In fact, the complexity and interdependency of the tone quality and loudness can be traced back to nineteenth-century playing instructions, where ambiguity

[44] Shen Li and Renee Timmers, 'Teaching and Learning of Piano Timbre Through Teacher–Student Interactions in Lessons', *Frontiers in Psychology*, 12 (2021), doi:10.3389/fpsyg.2021.576056.

between expressive terms and dynamic level was observed. In Clementi's and Czerny's treatises from the nineteenth century, they considered touches or expression as variations of dynamics.[45] The term *dolce* that Clementi interpreted as 'sweet, with taste' was listed together with other dynamic variations such as *piano*, *mezzo*, *pianissimo*, *forte*, *crescendo*, and *decrescendo*.[46] Czerny also described *dolce* as 'soft' and *dolcissimo* as 'very soft'.[47] In other words, softer sound would result in a more '*dolce*' timbre. This shows that the entangled concepts between the scientific and artistic way of viewing this topic are not independent of each other.

Pianists understand that once a key is struck, the rest that follows will be up to the mechanism of the piano and is no longer within their control. As Doğantan-Dack said:

> [...] during a live performance the pianist has only one chance to get the depth of attack, the fullness of the tone and its dynamic 'right' or as intended: there is no possibility of adjusting a sound that has been initiated in a certain manner.[48]

[45] Suan Liu Lee, 'Czerny's Interpretation of Beethoven's Piano Sonatas' (unpublished PhD thesis, University of Wales Bangor, 2003), p. 40 <https://research.bangor.ac.uk/portal/files/20580722/null> [accessed 11 January 2024].
[46] Clementi, Introduction to the Art of Playing on the Piano Forte (Clementi, Banger, Hyde, Collard & Davis, n.d. [1803]), p. 9.
[47] Carl Czerny, *Complete Theoretical and Practical Pianoforte School, Op500*, trans. by J. A Hamilton, 3 vols (R. Cocks, 1839), I, p. 184.
[48] Mine Doğantan-Dack, 'A Sketch for a Hermeneutic Phenomenology of the Piano', in *Music and Sonic Art: Theories and Practices*, ed. by Mine Doğantan-Dack and John Dack (Cambridge Scholars Publishing, 2018), pp. 45–58 (p. 50) <https://books.google.ie/books?hl=en&lr=&id=RoeDDwAAQBAJ&oi=fnd&pg=PA45&dq=effort+shape+dack&ots=yYu7yp99G9&sig=VIJ7OEfRohW3dp7_uBWSxmEs6fo&redir_esc=y#v=onepage&q&f=false>.

And for this particular reason, pianists practice touch, techniques, and movements repeatedly, experimenting and refining their skills to achieve the most ideal tone. Ortmann himself (1929), when explaining the action and reaction in piano playing, also wrote:

> When, for example, a chord is played loudly and quickly, the hand is firmly fixed as the arm descends and before the key is struck. The reaction, I might say, is present before the action causing it. This contradiction is only apparent. What actually happens is that the player images the key-resistance, and hence prepares the spread of muscular contraction, the necessary fixation of the joints, before the key is reached. Through experience and talent this image can function very accurately, and upon its accuracy depends the question of whether or not the player will get the desired tonal result.[49]

The refinement of tones and sound, together with the movements and techniques to produce these tones, require extensive practice to ensure that a consistent touch is established where every attempt maintains accuracy, precision, and stability. This is done with the goal of musicians being able to prepare and anticipate each set of movements and gestures, as well as their sounds, to ensure that the desired effect can be achieved on the very first attempt. While there are other elements that need to be practiced by a musician, we can easily imagine the effort needed by pianists to practice the touch, movements, and gestures while they listen attentively to the tones produced. According to Ericsson and others, the best musicians have spent over 10,000 hours practising their instrument by the age of

[49] Otto Ortmann, *The Physiological Mechanics of Piano Technique* (Stephen Austix and Sons, 1929), p. 87.

21.[50] Therefore, the physical contexts such as the kinaesthetic sensation, techniques, body movements, and gestures required in producing a tone are of utmost importance, although that may be difficult to imagine for non-musicians.

Another issue that would probably cause disagreement among musicians would be the fact that the different tones and colours of the sound produced were affected purely by key speed. It is common for body movements to be associated to the sound, tone, or timbre produced in piano playing. The exclusion of the functionality of one's touch in the case of creating different sounds or timbres would imply that techniques, movements, and gestures are no longer essential to piano playing; but they (techniques, movements, and gestures) are still one of the most discussed approaches in achieving an ideal tone on the piano in many music settings, especially in a class or among peers, despite empirical studies showing that different touches have little effect on the sound.

In their study, 'Teaching and Learning of Piano Timbre Through Teacher–Student Interactions in Lessons', Li and Timmers documented non-verbal instructions in teaching that were given by teacher to student, where the teacher pushed the student's back forward towards the piano to produce a leaned forward body posture, while requesting for 'more' to help student associate with the feeling of pain and struggle.[51] Another example that relates the body posture to the sound produced occurs when the teacher holds the student's wrist and lifts her hand slowly

[50] K. Anders Ericsson, Ralf T. Krampe, and Clemens Tesch-Römer, 'The Role of Deliberate Practice in the Acquisition of Expert Performance', *Psychological Review*, 100.3 (1993), pp. 363–406 (p. 379), doi:10.1037/0033-295X.100.3.363.
[51] Li and Timmers, 'Teaching and Learning of Piano Timbre', p. 10.

to help the student get the ideal timbre.[52] This study clearly shows that teaching and learning timbre is not only achieved through words or sound, but also through direct or indirect physical touch and the teacher's mimicking gestures. These instructions that combine body movements and techniques would not be taught or emphasized if they are not important in a musical performance.

That said, Ortmann when examining sound production, came from a scientific perspective, and mostly examined the moment of key striking, as well as the resulting mechanism of the piano action (key speed) after a key was struck, stopping at a more scientific scope or breadth without taking into account the scenarios or gestures that happen prior to striking the key; nor did he consider the tactile and kinaesthetic sensation of a pianist. However, hand position prior to the sound producing actions or movements that make the sound happen, could influence, and help pianist shape the tone in advance in a variety of ways.

Rolf Inge Godøy mentioned the need to include the gesture that starts before and the gesture that ends after a single tone or a group of tones. He said that:

> […] Western musical thinking often tends to ignore the fact that any sonic event is actually included in a sound-producing gesture, a gesture that starts before, and often ends after, the sonic event of any single tone or group of tones. […] Western musical thought has not been well equipped for thinking the gestural-contextual inclusion of tone-events in music, hence also not well

[52] Ibid.

equipped for handling issues such as grouping of tone-events and expressivity in music.[53]

Therefore, while the scientific concepts of acoustics are still valid, examining only the moment the key is struck could be considered to take too narrow a view.

Furthermore, we should not overlook the audience's perception of a performance as they can be affected by the visuals of body movements by 'listening' through their eyes. For example, Doğantan-Dack stated that the initiatory gesture in producing a singing touch involves positioning the fingers and hand in a fixed position before striking the keys.[54] When performing this gesture, the musical event began not at the initial contact with the keys, but before that, during the course of the gesture itself. The result of this initiatory gesture not only impacts one single note, but the entire group of notes. Naturally, the execution of this initiatory gesture and the sound produced that follows mould the tone quality perceived by the listener. Therefore, as Doğantan-Dack said, 'it is not the attack that produces the sound, but the gesture bringing about the attack'.[55]

In more recent years, the perception of touch, including tactile experience and sensory feedback, although not discussed at length, was noted and mentioned in

[53] Rolf Inge Godøy, 'Gestural Affordances of Musical Sound', in *Musical Gestures: Sound, Movement, and Meaning*, ed. by Rolf Inge Godøy and Marc Leman (Routledge, Taylor & Francis Group, 2010), pp. 103–25 (p. 110) <https://ebookcentral.proquest.com/lib/nuim/reader.action?docID=465371#>.
[54] Mine Doğantan-Dack, 'In the Beginning Was Gesture: Piano Touch and the Phenomenology of the Performing Body', in *New Perspectives on Music and Gesture*, ed. by Elaine King and Anthony Gritten (Taylor & Francis Group, 2011), p. 257–58 <https://ebookcentral.proquest.com/lib/nuim/reader.action?docID=679214&ppg=270>.
[55] Doğantan-Dack, 'In the Beginning Was Gesture', p. 259.

empirical sound studies. Werner Goebl and others, while conducting an empirical study, also allowed for the possibility of a rather musical perspective, noting that:

> The results of the present experiments [identifying pressed and struck touches and discriminating key bottom sound in piano tones] can be seen in the light of both of these theories: they suggest that the sound parameters related to touch are perceived as part of the piano tone and help to invoke a sense of the way the particular piano tone was produced.[56]

In another paper, Goebl also noted that although different touches on the piano would consequent in the same final hammer velocities, there are differences in other aspects such as kinematic, mechanical, acoustical, and perceptual differences.[57] Therefore, piano touch cannot be merely described as the hammer velocity, but 'a multi-modal phenomenon including auditory, visual, tactile, and proprioceptive components and therefore concerning all aspects of piano technique'.[58]

Having justified that our touch, techniques, hand movements, and gestures carry important information, a pure empirical study may not be best suited for performance studies. Instead, one should seek this information from the performer. Doğantan-Dack wondered, while watching video of her own performance, what

[56] Werner Goebl, Roberto Bresin, and Ichiro Fujinaga, 'Perception of Touch Quality in Piano Tones', *The Journal of the Acoustical Society of America*, 136.5 (2014), pp. 2839–50 (pp. 2848–49), doi:10.1121/1.4896461.
[57] Werner Goebl, 'Movement and Touch in Piano Performance', in *Handbook of Human Motion*, ed. by Bertram Müller and Sebastian Wolf (Springer, 2017), pp. 1–18 (p. 10), doi:10.1007/978-3-319-30808-1_109-1.
[58] Ibid., p. 10.

would have happened if a performance was only studied empirically without the performer's input, and wrote the following:

> As I watch the video of my performance with the Marmara Trio in Istanbul with the intention of reflecting on it in research terms, I start wondering how an empirical musicologist or music psychologist might analyse and make sense of the sounds of this performance. What if they measure the acoustical data in term of currently measurable expressive parameters and perhaps fit the result into such contexts as performance traditions in chamber music or listener responses? What kind of knowledge would this analysis reveal about what happened musically – and perhaps socially as well – in that particular performance that evening? Would they be able to reach an understanding about why we chose a particular tempo, adopted a particular phrasing, or how the performance impacted the performers emotionally? Most significantly, what kind of conclusions would they draw regarding the values that we held – and exercised – in shaping the sounds of the music there and then in real time?[59]

Her words raised important questions about the suitability of analysing the sound of a performance by measuring the acoustical data using only measurable expressive parameters without any input from the performer, and problematise the authenticity or accuracy of the knowledge, especially in terms of what happened musically, indirectly implying the importance of the indispensable perspective and input of a performer. In another research, Doğantan-Dack pointed to the same issue

[59] Mine Doğantan-Dack, 'The Art of Research in Live Music Performance', Music Performance Research, 5 (2012), pp. 34–48 (p. 41).

when mentioning the lack of research on the physical experience of playing Beethoven's dynamics from a performer's perspective.[60] The input of a performer is seldom included in music performance research, and studies from a performer's perspective were not common until quite recently. In fact, Doğantan-Dack raised this issue back in 2011, saying that 'within the literature that addresses the involvement of the body in musical performance, studies that explore performance movements and gestures from the performer's perspective are entirely absent',[61] and that she aims to 'understand the contributions of the lived and living body of the performer, with its pulsating inner life and particular point of view […]'.[62] Cook also agreed that the performer's perspective had been underrepresented, and he believed that it was for the simple reason that few musicologists would be in a position to undertake such research properly, as it requires a professional musician to provide and contribute what was 'physically involved in making music and what this entails for musicology', citing Doğantan-Dack's words.[63]

1.2.3 The Performer's Bodily and Listening Experiences

The subject of this research — playing techniques and body movements of a pianist — can be unsurprisingly broad as these gestures are interwoven with other aspects of music such as rhythm, harmony, and articulation, to name a few. These intertwined aspects, along with the techniques, movements, and gestures in piano playing are considered and experienced as a 'single, unified Gestalt'.[64] Therefore, it could be

[60] Mine Doğantan-Dack, 'Performing Beethoven's Musical Dynamics', *Music Performance Research*, 10.1 (2020), pp. 1–35 (p. 4), doi:10.14439/mpr.11.1.
[61] Doğantan-Dack, 'In the Beginning Was Gesture', p. 247.
[62] Ibid.
[63] Nicholas Cook, 'Everything Counts', in *Beyond the Score: Music as Performance* (Oxford University Press, 2014), p. 312, doi:10.1093/acprof:oso/9780199357406.003.0010.
[64] Doğantan-Dack, 'In the Beginning Was Gesture', p. 250.

said, as mentioned by Doğantan-Dack, that 'categorical boundaries between performance gestures in terms of their functions, even if they exist, are at best fuzzy'.[65] However, looking more closely at the field of music performance, in regards to the topic of pianist's touch, Doğantan-Dack stated that an initiatory gesture 'prepares the moment of impact between the fingers and the instrument'[66] and 'has a profound effect on the tone quality of the ensuing musical sound, greatly contributing to the phenomenon of touch'.[67] In this case, the techniques and physical approaches such as specific hand positions recommended in the treatises that are applied in initiatory gestures have a 'definable musical function' and are therefore one of the useful starting points in the inquiry about the performing body.[68]

In the effort to study hand movements and its corresponding effects, it would not be uncommon to study the differences in the sound produced by different techniques. This would typically be done through software analysis of the recorded audio, among other empirical methods. However, just as 'a butterfly can flap its wings in Peking, and in Central Park, you get rain instead of sunshine',[69] a small change in movement can affect the force exerted on the keys, the speed of the hammer, the way subsequent keys are pressed, and the interaction between subsequent notes, which could then lead to a difference in sound produced in terms of dynamics, timbre, speed, or a combination of any number of elements. It may be difficult to perform empirical studies to distinguish or relate the results to specific changes without significant effort, time, and complexity. On the other hand, these

[65] Ibid., p. 252.
[66] Doğantan-Dack, 'In the Beginning Was Gesture', p. 252.
[67] Doğantan-Dack, 'In the Beginning Was Gesture', p. 252.
[68] Doğantan-Dack, 'In the Beginning Was Gesture', p. 252.
[69] *Jurassic Park*, dir. by Steven Spielberg (USA, 1993).

minute and complex differences could be felt and possibly heard by the performer, being the one to experience it while equipped with musical ears. For example, Goebl and others showed in an experiment that musically trained musicians were able to differentiate between sounds that did and did not contain the sound of the key bottoming-out, even though it occurs almost simultaneously with the far more notable onset of a piano tone, especially considering the subtlety of the touch sounds.[70]

Therefore, it can be said that the role of a 'listener' is not exclusive to only the audience or a third party, as the performer themselves would also listen, but in different manner from the audience. Bob Snyder, as cited in Doğantan-Dack, mentioned that the nuances heard by listeners will not be experienced to the same level as a performer.[71] While listeners would focus on aspects such as the pitch and rhythm in a performance, performers, being the owners of those gestures, would also pay attention and tune their ears to the tone colour and timbre, which are closely linked to the human gestures.[72] In a study where Galembo and Askenfelt consider the perception of the quality of the instrument between a performer and a listener, the findings showed that the participants (pianist pedagogues) after playing on the three instruments used for the study, could not identify which piano was played in listening tests, when taking the role of a listener behind an acoustically transparent curtain.[73] However, when the participants (being blindfolded) were asked to play and

[70] Goebl, Bresin, and Fujinaga, 'Perception of Touch Quality in Piano Tones', p. 2848.
[71] Bob Snyder, *Music and Memory: an introduction* (MIT Press, 2000), p. 92, cited in Doğantan-Dack, 'In the Beginning Was Gesture', p. 249.
[72] Doğantan-Dack, 'In the Beginning Was Gesture', p. 250.
[73] Alexander Galembo and Anders Askenfelt, 'Quality Assessment Of Musical Instrument – Effects Of Multimodality', in *Proceedings of the 5th Triennial ESCOM Conference*, 2003, pp. 441–44 (p. 442) <https://www.epos.uni-osnabrueck.de/books/k/klww003/pdfs/004_Galembo_Proc.pdf>.

identify three of the examined pianos with and without headphones fed with white noise, they were almost always able to identify the three pianos correctly. The authors noted in the discussion of the paper that:

> [the performer] actively controls the instrument and perceives a very informative kinesthetic feedback. Simultaneously, (s)he receives an auditory response, the sound. Since both feedbacks are the result of the performer's own activity, (s)he has strong expectations and thus a better perception of the details of the feedback, which are not available for the listener.[74]

Therefore, listening as a performer has its advantages and an additional layer of insights that listeners do not have. A study that includes such information would also benefit from the performer's detailed perspectives that may not be easily demonstrated through software analysis or other empirical methods. For example, they can provide detailed descriptions of the kinaesthetic sensation of a gesture or technique, such as the sensitivity of touch, the force exerted on the keys, the flow of energy from the body into the keys, how one's playing is affect, along with the reasoning behind the corresponding movements.

Doğantan-Dack also argued that a memory for tone colour would also be developed based on kinaesthetic sensations.[75] While it was shown empirically by Ortmann and Jeans that the basis of tone colour is the force when striking the key and the resulting velocity of the hammer, as mentioned previously, it would be

[74] Galembo and Askenfelt, 'Quality Assessment Of Musical Instrument – Effects Of Multimodality', pp. 442–43.
[75] Doğantan-Dack, 'In the Beginning Was Gesture', p. 250.

difficult for pianists to think in terms of force and hammer speed when performing. Rather, a performer's variety of touch, and their different approaches together with gestures and movements, may help them produce the force and hammer speed required to achieve a specific sound, allowing for a diverse range of tone colours and timbres at the fingertips of the pianist. For example, Ortmannn's experiment found that rigid and curved finger touches more frequently produced louder tones compared to relaxed and flat finger touches, due to the increased force applied onto the keys, leading to faster hammer speeds and greater tonal intensity.[76] While the difference of these techniques and movements used only contribute to a small part of piano playing, they are not only a tool for moulding sound, but also for providing consistency in the produced tone through a consistent touch that is a result of the tone colour memory developed from the combination of kinaesthetic sensations and listening during repeated practice.

Musicologists studying tone production and performer's movements, too, think that the performer's bodily experiences are quite important. Li and Timmers mentioned that the bodily experience and movements are deeply connected to the experiences of producing piano tones, and that it is more holistic rather than a hard-wired sonic feature,[77] while Doğantan-Dack said:

> From the perspective of performers, there is an embodied sense in which the making of musical dynamics is experienced as *effort-shapes* that are related to but distinct from the pitch-timbre content of musical sounds.[78]

[76] Ortmann, *The Physical Basis of Piano Touch And Tone*, p. 23.
[77] Li and Timmers, 'Teaching and Learning of Piano Timbre', p. 12.
[78] Doğantan-Dack, 'Performing Beethoven's Musical Dynamics', p. 7.

She further explained that:

> The spatio-temporal shape of these movements and gestures are thoroughly intertwined with and determined by the degree of effort the performer exerts during tactile interaction with the musical instrument.[79]

While body movements form the basis of piano playing, it is difficult for pianists to think in terms of how much force to exert onto the keys. However, supplementing oneself with the 'affectively felt qualities'[80] when playing or practicing would be much more suitable in a performance or practice. As Doğantan-Dack wrote:

> The different degrees of exertion the pianist employs in order to produce different gradations of dynamics–which require the deployment of different muscular configurations–represent a spectrum of embodied aesthetic features arising from the materialization of different effort shapes, covering a wide range of qualities – from 'tranquil' or 'gentle' to 'violent' or 'fierce'.[81]

Without much explanation, it can be easily understood that pianists would feel and experience different sensations from the interaction between the instrument and themselves in the process of music making through varying dynamic ranges by differentiating the degree of effort involved in playing. In simple terms, when applying this notion on Ortmann's and Jeans's concept of hammer speed, the variety

[79] Ibid., p.7.
[80] Mine Doğantan-Dack, 'A Sketch for a Hermeneutic Phenomenology of the Piano', p. 53.
[81] Mine Doğantan-Dack, 'A Sketch for a Hermeneutic Phenomenology of the Piano', p. 53.

of effort could be translated into different weights put onto the keys, and consequently result in different hammer speeds, and thus different dynamics. Although, in reality, it is far more complex than this as dynamics are not the only element that pianists feel and hear at a specific moment.

Additionally, the tones produced during repeated practice can help pianists connect each effort shape to a tone or sound, training pianists to anticipate the subsequent sound, as well as helping to build their library of techniques and movements for creating a variety of tone qualities. Althenmüller and Gruhn said:

> Motor skills, on the one hand, can only be automated by countless repetitions; aural skills, on the other hand, are developed through a broad variety of listening experiences. These skills are not represented in isolated brain areas but rather depend on the multiple connections and interactions established during training within and among the different regions of the brain.[82]

I believe that this phenomenon mentioned by Athenmüller and Gruhn occurs frequently during practice sessions where a pianist would need to listen closely to the tones they produced while paying attention to techniques and approaches, making connections between the two. In the process of repeated practice, a performer refines the touch and examines the sound produced carefully, moulding them into their

[82] Eckart AltenMüller and Wilfried Gruhn, 'Brain Mechanisms', in *The Science and Psychology of Music Performance: Creative Strategies for Teaching and Learning*, ed. by Richard Parncutt and Gary McPherson (Oxford University Press, 2002), pp. 63–81 (p. 63) <https://ebookcentral.proquest.com/lib/nuim/reader.action?docID=281325&ppg=76>.

desired sound. These skills are built over time and retained in the performer's long-term memory, allowing them to discern the minute differences in sound.[83]

These experiences by the performer explained through the notion of effort shapes, kinaesthetic sensations, and the interactions between the performer and the instrument could be considered the parallel of scientific studies for musicians, where these kinaesthetic sensations and tones experienced by performers are the equivalent units of measurement to 'loudness', 'amplitude', or 'the force exerted' in empirical studies. However, these experiences can only be acquired through participation and involvement, and would therefore only be available from the performer. The performer's perspective, therefore, in general terms, can provide data that would not otherwise be present in empirical studies.

One could say that the two differing views on sound study show merely a difference in presentation: scientists collecting empirical data of tones in numbers, while artistic researchers express their aural and physical experiences through words or performances. For example, Ortmann presented his data on loudness using sine curve graphs, while pianists would express them through a performance or demonstration; Jeans' study described timbre in terms of spectrograms, fundamental tones, partials and harmonics, while pianists would be inclined to describe timbre as a whole using descriptors such as 'harsh', 'soft', 'gentle', and 'bright'. The presentation method of choice would depend on the goals of the research. While empirical studies are excellent in conveying information visually, its findings could become impractical when faced with incompatible settings. For example, it would be

[83] Doğantan-Dack, 'In the Beginning Was Gesture', p. 250.

difficult for performing pianists to think of the force used in playing a key in terms of the number of grams (g). It is also difficult for pianists to visualise a tone's timbre by its component frequencies as presented by Jeans, but they are useful for deepening our understanding of sound, its qualities, and the physical phenomenon responsible for creating it. On the other hand, a musical ear can evaluate tones as a whole — a combination of loudness, intensity, harmony, tone colour, tempo, and more — identifying minute variances in any one aspect.

In this PhD research, as a performer–researcher, one of the main responsibilities is to employ and examine the use of the researched techniques and their corresponding movements in a broader context, such as the movements that would be produced as a result of applying them. Despite earlier discussions (in the nineteenth and twentieth centuries) about taking the performer's role out of the equation by posing a performer only as an invisible mediator,[84] Doğantan-Dack mentioned that the unusual dynamic markings of Beethoven's Op. 70 No. 2 piano trio led to 'putting the music-making body firmly at the centre of musical experience and understanding, but also in marrying the artistic volition to it inseparably', disputing the thought that 'a performer's highest ambition should be self-effacement… [and] invisibility'.[85] Furthermore, the part-to-whole concept discussed by Julie Knerr points towards further involvement of the performer in a performance. Knerr mentioned that most pedagogues in the twentieth century, such as Matthay, Ortmann, and many more, agreed with the part-to-whole learning concept, whereby pianists learn the individual parts, then integrate them into a bigger picture for the

[84] Doğantan-Dack, 'Performing Beethoven's Musical Dynamics', p. 25.
[85] Ibid., p. 26.

whole playing to come together.[86] Like these pedagogues, the researched pedagogues such as Czerny, Hummel, Leschetizky, and Deppe gave their instructions in a part-to-whole structure; by introducing readers to the mechanism and movement of the hand, then the types of touches or movements that can be used in a specific musical style or articulation. However, playing as a whole requires coordination of the limbs and body from the performer to put together and chain the smaller movements and motions that were learned separately into a continuous and cohesive motion, potentially leading to hand or larger body movements. That said, it is undeniable that the performer is as much a part of the performance as is the musical work. In this case, a performer-researcher's input would be able to provide an understanding of the initiatory gestures, their corresponding movements, as well as the kinaesthetic sensations of each movement.

This research on techniques of a pianist fit nicely within the form of research where the performer's perspective is crucial to studying the phenomenology of one's musical experience. The performer's perspective also benefits the construction of discourses on historical techniques and interrelated issues such as the outcome of body movements, the interaction with historical instruments when employing historical techniques, and how they can be applied on the modern piano, through the embodied experience of a twenty-first century performer-researcher.

[86] Julie Knerr, 'Strategies in the Formation of Piano Technique in Elementary-Level Piano Students: An Exploration of Teaching Elementary-Level Technical Concepts According to Authors and Teachers from 1925 to the Present' (unpublished PhD dissertation, The University of Oklahoma, 2006), p. 432 <https://hdl.handle.net/11244/1099> [accessed 18 November 2024].

1.2.4 Empirical Studies and Technologies

While purely empirical studies on sound may mean excluding the performer's input on movements and gestures, visual studies of a performer's physical aspects such as movements and postures can be nourished with empirical studies in visual feedback, utilizing methods such as motion capture. As technology advances, the use of motion capture, motion tracking, and machine learning are increasingly incorporated into studies in many fields, and music is no exception. For example, Caramiaux's and Tanaka's review of machine learning and its application on interactive music and new digital instrument design considered it a useful way to analyse musical gestures.[87] Computer vision was also used in determining the notes being played on a piano and the finger that played it.[88] Several types of systems can be used to study movements, each with their own advantages depending on the area of study.

A few different technologies can be used in tracking motion. For example, the Xsens system provides 3D motion analysis using inertial measurement units embedded inside strap-on modules or within a Lycra suit.[89] This system is portable, unlike marker tracking systems. While the limb tracking accuracy is excellent, the required Lycra suit or strap-on modules might not be suitable for music performance as it may affect the performer's range of motion. Conversely, passive markers are usually tracked using infrared cameras, which is the most common method in the motion tracking industry.[90] Vicon, Optitrack, and Qualysis are examples of passive

[87] Baptiste Caramiaux, and Atau Tanaka, 'Machine Learning of Musical Gestures', in *Proceedings of the International Conference on New Interfaces for Musical Expression (NIME)*, 2013, <http://nime.org/proceedings/2013/nime2013_84.pdf>.
[88] Jangwon Lee and others, 'Observing Pianist Accuracy and Form with Computer Vision', in *2019 IEEE Winter Conference on Applications of Computer Vision (WACV)* (IEEE, 2019), pp. 1505–13, doi:10.1109/WACV.2019.00165.
[89] 'MVN Analyze' <https://www.xsens.com/products/mvn-analyze> [accessed 3 April 2021].
[90] 'What Is Motion Capture? | What Can I Use Motion Capture For?', Vicon <https://www.vicon.com/about-us/what-is-motion-capture/> [accessed 3 April 2021].

marker systems that have improved over the last two decades and have achieved considerably smaller errors today.[91] According to Topley and Richards, these modern systems are also able to track in real time and export motion coordinates immediately, unlike older systems that take minutes to hours.[92] While these systems are able to produce accurate 3D data with high resolution and high frame rate,[93] they are less accessible, not portable, and very expensive. According to Yahya and others in a review of tracking upper limb motion, Vicon, Qualisys, and BTS Smart-D analysis were considered the gold standard for clinical rehabilitation, but not for home-based rehabilitation.[94] This is likely due to the prohibitive cost, as well as the difficulty in setting up and calibrating the system at home. To adapt this into a piano-centric music research would require either a dedicated setup or to regularly transport a piano to an existing system. Active marker tracking, on the other hand, uses signals from LEDs on the marker to locate its position.[95] One example of such technology is the HTC Vive tracker system. While it could track movements well, Borges showed that Vive's algorithm is not suitable for applications where accuracy and repeatability are key.[96] In terms of music research, MacRitchie and Bailey noted that mocap systems with active markers usually need to be connected to a power source or main computer and is therefore not suitable in the setting of a musical performance.[97]

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[91] Matt Topley and James Richards, 'A Comparison of Currently Available Optoelectronic Motion Capture Systems', *Journal of Biomechanics*, 106 (2020), doi:10.1016/j.jbiomech.2020.109820.
[92] Ibid.
[93] Jennifer MacRitchie and Nicholas J. Bailey, 'Efficient Tracking of Pianists' Finger Movements', *Journal of New Music Research*, 42.1 (2013), pp. 79–95 (p. 80), doi:10.1080/09298215.2012.762529.
[94] Muhammad Yahya and others, 'Motion Capture Sensing Techniques Used in Human Upper Limb Motion: A Review', Sensor Review, 39.4 (2019), pp. 504–11, doi:10.1108/SR-10-2018-0270.
[95] Chandra Prakash and others, 'Passive Marker Based Optical System for Gait Kinematics for Lower Extremity', *Procedia Computer Science*, 45 (2015), pp. 176–85, doi:10.1016/j.procs.2015.03.116
[96] Miguel Borges and others, 'HTC Vive: Analysis and Accuracy Improvement', in *2018 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)* (IEEE, 2018), doi:10.1109/IROS.2018.8593707
[97] MacRitchie and Bailey, 'Efficient Tracking of Pianists' Finger Movements', p. 80.

A more convenient and less demanding system would be to use a computer vision-based tracking system and machine learning where they utilise captured videos to estimate the pose of a subject. Openpose[98] and DeepLabCut (DLC) [99] are two examples of computer vision systems that leverage the learning and estimation ability of machine learning to enhance its pose estimation algorithm.

DeepLabCut (DLC) is an efficient markerless pose estimation toolkit, which achieves excellent performance that is comparable to human accuracy presented by Mathis and others. This open-source system provides a toolbox to extract specific frames for labelling, training data based on labels, and also to train machine learning networks with the desired feature sets. It is also not limited to tracking humans and can be applied to all organisms.[100] It was used in different settings such as behavioural tracking of animals,[101] tracking of coins in magic tricks,[102] and tracking of finger tapping movements related to Parkinson's bradykinesia.[103] One benefit of DLC is that it allows users to evaluate results and perform secondary training of neural networks to improve its performance.[104] However, initial testing of DLC

[98] Zhe Cao and others, 'OpenPose: Realtime Multi-Person 2D Pose Estimation Using Part Affinity Fields' in *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 43.1 (2021), pp. 172-186, doi: 10.1109/TPAMI.2019.2929257.
[99] Alexander Mathis and others, 'DeepLabCut: Markerless Pose Estimation of User-Defined Body Parts with Deep Learning', *Nature Neuroscience*, 21 (2018), pp. 1281–89, doi:10.1038/s41593-018-0209-y.
[100] Mathis and others, 'DeepLabCut: Markerless Pose Estimation of User-Defined Body Parts with Deep Learning'.
[101] Tanmay Nath and others, 'Using DeepLabCut for 3D Markerless Pose Estimation across Species and Behaviors', *Nature Protocols*, 14 (2019), pp. 2152–76, doi:10.1038/s41596-019-0176-0.
[102] Regina Zaghi-Lara and others, 'Playing Magic Tricks to Deep Neural Networks Untangles Human Deception', *ArXiv:1908.07446* (2019), doi:10.48550/arXiv.1908.07446.
[103] Stefan Williams and others, 'The Discerning Eye of Computer Vision: Can It Measure Parkinson's Finger Tap Bradykinesia?', *Journal of the Neurological Sciences*, 416 (2020), doi:10.1016/j.jns.2020.117003.
[104] Nath and others, 'Using DeepLabCut for 3D Markerless Pose Estimation across Species and Behaviors'.

revealed that the results were below expectations, as the process required extensive training, and might lead to a biased model where minor changes in clothing colour, camera angle, background, or lighting would significantly impact the data quality. Therefore, while it offers flexibility in terms of tracking different things, its requirement of a controlled environment and extensive training time does not suit this research project.

On the other hand, a study by Nakano and others found that 80% of the mean absolute error produced by OpenPose with several video cameras is less than 30mm when compared to an optical marker-based motion capture system. When compared against DeepLabCut, Giulia Panconi and others agreed with prior studies that the OpenPose "BODY_25" Pre-Trained model is a leading markerless system where it surpasses the DLC "Model Zoo full_human" Pre-Trained model and even some of the authors' DLC Custom trained models, while only their more refined DLC models were able to surpass the OpenPose Model.[105] However, it was noted that to ensure reliability and accuracy in the data, the custom trained models required additional time and effort making it a more time-consuming process.[106] For example, it was noted that the initial training time alone was approximately 10 hours,[107] excluding steps such as manually labelling body parts, repeating the training process with smaller training sets, and the refinement process to enhance the model's performance. Therefore, this research opted for OpenPose, which presented a sufficiently precise and accurate solution. The results from OpenPose were used to

[105] Giulia Panconi and others, 'Deep-Learning-Based Markerless Pose Estimation Systems in Gait Analysis: DeepLabCut Custom Training and the Refinement Function', *arXiv preprint arXiv:2407.10590* (2024), p. 7–9, doi:10.48550/arXiv.2407.10590.
[106] Ibid., p. 9.
[107] Ibid., p. 5.

complement the performer's perspective in terms of body movements, providing an outsider perspective. With some external help, a software titled PoseProcessor[108] that uses OpenPose[109] and OpenCV[110] was put together for the use of this research in extracting data of the tracked body movements.

From the content of this subchapter, we have established the importance of the performer's perspective in a performance, as it provides us with insights into their experiences, including kinaesthetic touches, bodily sensations, body movements, their flow of energy, and their perception on listening. Therefore, the performer's experience on using historical techniques will be extracted through performer's input, while the aspect on resulting body movements will be supported by motion capture technology that provides a more empirical perspective to this research.

1.3 Methodology of Artistic Process

1.3.1 Artistic research and Subjective Experiences

As this research re-imagines historical piano techniques from the 1800s to 1900s, it would require a methodology that encompasses musicological research, artistic practice, and an empirical study.

While musicological research will first be conducted to establish the foundation of this research, the core of this research lies in the artistic process and

[108] Karunika Choo, 'PoseProcessor', Bitbucket, <https://bitbucket.org/karunikachoo/poseprocessor/src/master/> [accessed 4 Dec 2024].
[109] Cao and others, 'OpenPose'.
[110] G. Bradski, The OpenCV Library, *Dr. Dobb's Journal of Software Tools*, (2000).

the findings of the performer-researcher from applying the researched techniques. As an empirical sound study may not be ideal, this research includes the performer's input alongside a brief empirical study of the visual aspects of movements to support the former and to provide multiplicity to the processes and findings of this research. Therefore, this artistic research combines the perspectives of artistic and empirical knowledge, the subjective and objective, the self and the other, the performer and the researcher, the inside and the outside, as well as the qualitative and the quantitative.

Although contrasting perspectives are included in this research, it is more heavily based on the performer's perspective, while using motion capture technology as a tool to enhance the performer's artistic process, and at the same time serve as a supplement to the main perspective, by providing a multifaceted view to enhance and strengthen the findings. This subchapter will address each entangled issue and the methodology needed in this research.

I believe most of us can agree that the moments during piano playing, the touch of the piano, the use of different techniques, and all inward feelings are only felt by the performer alone. Just as Klein said,

> […] it (artistic knowledge) has to be acquired through sensory and emotional perception, precisely through artistic experience, from which it cannot be separated. Whether silent or verbal, declarative or procedural, implicit or explicit - in any case, artistic knowledge is sensual and physical, 'embodied

knowledge'. The knowledge that artistic research strives for, is a felt knowledge.[111]

Therefore, it is important that the artistic process of the performer is studied in detail and that the knowledge acquired when involving myself in the activity of applying historical techniques are properly enunciated. These can be achieved through qualitative research.

One qualitative methodology that focuses on the first-person perspective is phenomenology, the study of 'conscious experience as experienced from the subjective or first-person point of view'.[112] This allows the experience and the felt qualities of the performer to be understood and documented. Studying the phenomenology of a piano performance requires a focus on self-consciousness, as most phenomenologists support the idea that the experiential dimension is characterised by tacit self-consciousness.[113] Dahl states that, 'an experience does not simply exist; it exists for itself, that is, it is given for itself, and this self-giveness is not merely a quality added to the experience, a mere varnish, it rather constitutes the very mode of being of experience'.[114] Experiences that derived from a performance, piano playing, or from a practice session, are usually retained by the performer. I believe it is a value that we developed at some point in our performing lives. The famous phrase 'play with your mind and not your fingers' said by many a piano teacher calls for the concentration and conscious playing of a pianist. These issues have also been mentioned by piano pedagogues. For example, Gieseking said: 'To

[111] Julian Klein, 'What Is Artistic Research?', *Research Catalogue*, (2012), doi:10.22501/rc.15292.
[112] Per Dahl, *Music and Knowledge: A Performer's Perspective* (Brill, 2017), p. 112.
[113] Ibid., p. 112.
[114] Ibid., p. 112.

acquire good technique is also mental work.'[115] He believed that when one practices with strong concentration when learning techniques, the skills can be achieved rapidly as compared to when the brain is left out.[116]

Many philosophers criticised phenomenology as it is strongly based on the first-person perspective and does not consider the third person perspective like that of the scientific approach.[117] But the use of phenomenology can be seen growing in investigating the experience of music performances as it is loosely agreed that 'qualitative data based on individual experience can be at least as valid as a more generalised empirical/observational approach'.[118] Holmes and Holmes said that 'the "committed introspection" of the performing artist can lead to insights that are not otherwise available'.[119] They continued by saying that:

> Aspects of performance under consideration may not necessarily be clear to an observer, nor quantitatively measurable, and unless this inherent methodological challenge is recognised and addressed, assumptions may be made about the inner world of the performer that, being rooted in the experience and expectations of the observer, have little foundation in reality.[120]

[115] Walter Gieseking and Karl Leimer, *Piano Technique* (Dover Publication, 1972), p. 50.
[116] Ibid.
[117] Dahl, *Music and Knowledge*, p. 112.
[118] Patricia Holmes and Christopher Holmes, 'The Performer's Experience: A Case for Using Qualitative (Phenomenological) Methodologies in Music Performance Research', *Musicae Scientiae*, 17.1 (2013), pp. 72–85 (p. 76), doi:10.1177/1029864912467633.
[119] Holmes and Holmes, 'The Performer's Experience', p. 76.
[120] Holmes and Holmes, 'The Performer's Experience', p. 77.

To account for subjective experience, Holmes and Holmes suggested a 'semi structured, conversation style interview',[121] which would be best performed by researchers who can empathetically understand the subject.[122] Holmes and Holmes also believed that the structure and flexibility of a semi-structured interview would lead to 'a more philosophically grounded approach to phenomenology than that implied by gathering description of experience as "what it is like", and thereby arguably, to more interesting and illuminating data'.[123] While a third-person perspective on subjective experiences may also be achieved through methodologies such as Interpretive Phenomenological Analysis (IPA), which involves interviews of the researcher with the subject like in ethnography, it is increasingly common to see the joint role of a performer-researcher in artistic research.

1.3.2 Performer-Researcher and Pluralistic Approaches

It is not uncommon to use different approaches in artistic research. Henk Borgdorff is of the opinion that methodological pluralism is logical in artistic research, as a researcher can use different methods and techniques in doing the research. He also said later in his book that there is not 'one distinct, exclusive methodology', on the condition that,

[121] Holmes and Holmes, 'The Performer's Experience', p. 78.
[122] Liora Bresler, 'Embodied Narrative Inquiry: A Methodology of Connection', *Research Studies in Music Education*, 27.1 (2006), pp. 21–43 (p. 21), doi: 10.1177/1321103X060270010201, cited in Holmes and Holmes, 'The Performer's Experience', p. 78.
[123] Holmes and Holmes, 'The Performer's Experience', p. 78.

> artistic research centres on the practice of making and playing. Practising the arts (creating, designing, performing) is intrinsic to the research process. And artworks and art practices are partly the material outcomes of the research.[124]

Apart from using multiple approaches, the role of a performer-researcher is also increasingly adopted in artistic research. Diane Daly undertook the role of a researcher and performer, and studied 'the relationships between a musician's body, the body of the instrument and the music that comes out of and through both', by focusing on her own practice and experience as a classical violinist.[125] In tackling and extracting information for her research, where she can have a sense of relationship between the subject of her study, Dalcroze Eurhythmics, and her own practice as a violinist, she used autoethnography as a tool in her artistic research.[126] Furthermore, she also applied an ethnographic tool alongside autoethnography where she includes interviews and conversations with her colleagues.[127] She demonstrated a 'mixed-mode approach' by combining artistic practice with different methods that helps in documentation and reflection.[128] Through this, she showed how the overlapping roles of the researcher and performer helped illuminate each other in her research. She said that,

[124] Henk Borgdorff, *The Conflict of the Faculties: Perspectives on Artistic Research and Academia* (Leiden University Press, 2012), p.123, doi:10.26530/OAPEN_595042.
[125] Diane Daly, 'Unearthing the Artist: An Autoethnographic Investigation', *The Qualitative Report*, 26.8 (2021), pp. 2467–2478 (p. 2468), doi:10.46743/2160-3715/2021.4796.
[126] Ibid. pp. 2469-70.
[127] Ibid. p. 2471.
[128] Daly, 'Unearthing the Artist', p. 2467.

> [t]his rigorous approach to gathering data proved illuminating from the onset of the inquiry, which highlighted for me the necessity of becoming a researcher in the practice studio, and not just being the instrumentalist.[129]

Apart from using ethnographic tools to provide a third-person perspective, alternative methodologies have also been used and introduced in artistic research, for example the use of a mixed method with the aid of modern technology that would help performers gain a third-person perspective of their own performance and allow more detailed reflection. One example of this can be seen when Giusy Caruso undertook the role of a researcher and a performer in studying her process of interpretation and practice of the *72 Etudes Karnatiques*. While reflecting on her own practice was a major part of her artistic research, she used a different method from Daly, where, apart from documentation, she also analysed her process empirically by using technology such as motion capture, as well as video and audio recordings.[130] Through this, she co-developed an alternative method from the traditional, self-observation-based phenomenological approach, called 'the performer-based analysis method', which can assist musician-researchers understand and describe their artistic process by use of modern technology as a mirroring tool to observe one's own performance.[131]

Caruso, as a performer and researcher who studied musical intentionality and gesture, said that, through her experience, she believed that a pluralistic approach is

[129] Daly, 'Unearthing the Artist', p. 2469.
[130] Giusy Caruso, 'Mirroring the Intentionality and Gesture of a Piano Performance: An Interpretation of 72 Etudes Karnatiques' (unpublished PhD dissertation, Ghent University, 2018), p. 12 <https://biblio.ugent.be/publication/8563258>.
[131] Caruso, 'Mirroring the Intentionality and Gesture of a Piano Performance', p. 12.

necessary in artistic research. Therefore, she used an interdisciplinary approach–a triangular artistic research system–to deal with different knowledge (theory, practice, and production) in her research.[132] She explained that:

> [p]ractice and production furnish the concrete territory of experiences where theoretical concepts are applied. Vice versa, theory concerns the knowledge and the strategies for reflecting, documenting and disseminating the research through practice and production. A mutual influence happens also between practice and production because practice is finalized to production and production is used as a feedback for practice. All these three domains share a common objective of documenting and disseminating the artistic process as an artistic research.[133]

As Janneke Wessling pointed out:

> The exceptional thing about research in and through art is that practical action (the making) and theoretical reflection (the thinking) go hand in hand. The one cannot exist without the other, in the same way action and thought are inextricably linked in artistic practice.[134]

Therefore, the role of a performer-researcher is essential for research on musical performance especially when the research is heavily associated with a performer's experience, as seen in the two examples above. The joint role of a performer-

[132] Caruso, 'Mirroring the Intentionality and Gesture of a Piano Performance', p. 7.
[133] Caruso, 'Mirroring the Intentionality and Gesture of a Piano Performance', p. 9.
[134] Janneke Wesseling, *See It Again, Say It Again: The Artist as Researcher*, Antennae Series, p. 2 (Amsterdam: Valiz, 2011).

researcher can be suitable in situations where the researcher possesses an understanding of the research context, the performance experience, and the performer's input at the same time. Through the pluralist approaches taken by performer-researchers from the above examples, it can be seen that reflection is one tool commonly adopted in artistic research. Furthermore, it was also agreed to be an important element by scholars such as Doğantan-Dack, where she said:

> What is important is that for the performer-researcher, exploring live performance necessitates reflecting upon the nature of the reflective component itself, contemplating the most appropriate means of documenting the event, and presenting the thought processes surrounding the performance.[135]

1.3.3 A Tool for Self-Reflection: Mirror

The function of a mirror was used by Leonardo da Vinci through one of his inventions that would give uncommon insights and perspectives to the performer.[136] This invention, which yielded to the visual and kinetic experience of the body, was mentioned when he imagined a mirror room built in an octagonal shape of eight mirrors. The structure of the room and the reflective surface of the mirrors, then granted the subject a multi-sensorial experience of the self, allowing the view of their own body from different angles and from an infinite number of reflections, which is uncommon and almost impossible in normal practice.[137] A performer relies on their

[135] Doğantan-Dack, 'The Art of Research in Live Music Performance', pp. 39–40.
[136] Kathleen Coessens, 'Artistic Paths in Five Images: Questioning Artistic Research', in *Knowing in Performing: Artistic Research in Music and the Performing Arts*, ed. by Annegret Huber and others (transcript Verlag, Bielefeld, 2021), pp. 51–62 (p. 57), doi:10.14361/9783839452875.
[137] Coessens, 'Artistic Paths in Five Images', p. 57.

memory of their past performances, focusing on their experience on stage, recalling each phrase played and each mistake made. These are all subjective perceptions of our own perspectives and recollections of when we were performing with expression, passion, and being deeply absorbed and engrossed in the performance, thus, the feeling and listening of the music as the mediator may be a different experience from the perspective of an audience. The experience of a performer may have been 'zoomed in', while the audience's would be 'zoomed out'. However, without a medium for playback such as a recording of the performance, performers can only rely on their memory. Coessens said, '[t]he actor in front of the mirror will experience what is normally reserved for other people – seeing his/her sides, back and movements.'[138] By revealing multiple reflections such as 'in-sights' and 'out-sights', the octagonal mirror room also allows us to go beyond reflection, to reflexivity, which is a process of reflecting on the experience of the self and the phenomenon studied, and how they influence each other.[139] It brings out the two sides in each aspect, such as the insight and out-sight and the self and the other.[140]

Coessens also used 'insights outside' as one of the metaphors to describe the complexity and varieties of artistic research. She described this metaphor using a few paintings such as Escher's *Drawing Hands* (1948), saying that 'the hands that draw and the painted hands are both in the artwork, painting each other, and blurring the frontiers between who is painting and who/what is painted', and that 'the self is a self and at the same time it is another'.[141] Also, by using Magritte's *La réproduction interdite*, a painting where a man is looking in the mirror at the back of his head,

[138] Coessens, 'Artistic Paths in Five Images', p. 57.
[139] Ibid., p. 58.
[140] Ibid., p. 58.
[141] Coessens, 'Artistic Paths in Five Images', p. 59.

Coessens explained the aspects of reflexivity where the merging of the insider and outsider views happen.[142] This connection can be commonly seen in artistic music research where a pianist is the one playing and performing, and at the same time, the one researching through the research subject–the pianist themself. When taking on two paradoxical roles, the lines are then blurred, as 'the self is a self (pianist) and at the same time it is another (researcher)'.[143] When a researcher studies themselves as a performer, they also blend the view of an insider and an outsider, blurring the subjective and objective view of the self. This artistic practice of jumping to and from the inside and outside provides both subjective and objective perspectives and the view from the self and the other.

With the participation of the outside and inside angles in the artistic practice, Coessens explained that:

> In the method of observing participation in artistic research, the resemblance of the ethnologist to the artist is reversed, in that the artist is not initially an observer, but a participant – the actor. By observing, reflecting and researching their own participation and activity, he or she becomes an observing participant. The roles are similar, but inversed, the artist coming from the inside, the ethnologist coming from the outside. As such the artist as an observing participant will have more difficulty in escaping idiosyncrasy and the research will always involve parts of personal knowledge, artistic development, identity and sensibility. At the same time, however, this subjective research attitude will be accompanied by multiple interactions with

[142] Ibid., p. 59.
[143] Ibid., p. 59.

> and from the outside. Each process of observing and researching artistic practices from the inside will necessarily link with knowledge and context from the outside. It will open new insights in creative processes; it will reveal interdisciplinary relations and lead to creative interactions between humans and materials as well as sharing personal and cultural knowledge.[144]

Similarly, in artistic research, the performer-researcher would need more than a single perspective. Like Leonardo da Vinci, the famous pianist Claudio Arrau, also uses the mirror to improve and be conscious of his own piano techniques.[145] The use of mirrors and the idea of obtaining the reflection of oneself has been normalised into music study today, as can be seen in how music practice rooms are commonly equipped with mirrors.

As a performer-researcher, the switching of roles is essential to providing a third-person view, in addition to the perspective of the performer, which can be helpful in dealing with the issue of subjectivity. The performer-based analysis method, co-developed by Caruso and others, that uses a mixed methodology of qualitative and quantitative approaches with the aid of technology-enhanced mirror as a tool,[146] can be suitably placed within the context of this research. Caruso and Nijs wrote that 'quantitative data on gesture and sound are used as external feedback to nourish music performance practice from the gestural and sound perspectives',[147]

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[144] Coessens, 'Artistic Paths in Five Images', p. 60.
[145] Caruso, 'Mirroring the Intentionality and Gesture of a Piano Performance', p. 12.
[146] Giusy Caruso and others, 'Gestures in Contemporary Music Performance: A Method to Assist the Performer's Artistic Process', *Contemporary Music Review*, 35.4–5 (2016), pp. 402–22, doi:10.1080/07494467.2016.1257292.
[147] Giusy Caruso and Luc Nijs, 'When Arts and Science Meet: Digital Technology in Artistic Research', *Journal of Music, Technology & Education*, 13.2/3 (2020), pp. 117–40(p. 125) <https://doi.org/10.1386/jmte_00019_1>.

highlighting the potential of quantitative data in providing a deeper understanding of the experience or intention of a performer. In this current research where I undertake the dual role of performer and researcher, incorporating quantitative data in a similar manner would be beneficial.

1.3.4 The Performer-based Analysis Method

Caruso used a combination of motion capture, sound and visual recording, and subjective descriptions. She realised that the quantitative data obtained using technology were useful for her own qualitative observations and reflections in her artistic practice, as the data acts as a reference and can help reinforce her own input. For example, it helped her note down the evolutions and transformations of her own performances in terms of gestures and sound when referring to the data.[148] In Caruso's artistic research process, both perspectives (qualitative and quantitative) were used. To extract qualitative information, she would 'philosophically explain the essence and understand the meaning of my [her] interpretation' as a performer, and to supplement the qualitative information, quantitative data was obtained using technology and served as an exemplifier for a more explicit study, allowing her the 'perspective as a performer [that] served to interpret the objective data provided by technology in light of my [her] interpretation of the score'.[149]

The use of both perspectives was termed the 'mixed method' by Caruso and Nijs,[150] where it uses both qualitative and quantitative data and offers a first- and third-person perspective to the study. It is becoming more common following the

[148] Caruso, 'Mirroring the Intentionality and Gesture of a Piano Performance', p. 12.
[149] Caruso, 'Mirroring the Intentionality and Gesture of a Piano Performance', p. 11.
[150] Caruso and Nijs, 'When Arts and Science Meet', p. 119, 124.

advancement in motion capture, audio analysis, and related technologies. Also, more research has been incorporating methodologies from two different perspectives, and this can especially be seen in music artistic research studying performers' body movements.

Another example can be seen where Caruso and others mentioned the bottom-up and top-down music performance analysis, integrating the two different perspectives in helping a performer's artistic process of researching the gestures of a contemporary music performance.[151] This method suggests making the enactment process of a performer more visible by incorporating a third- and first-person perspective, where the recording and analysis of the corporeal involvement (gestures) in a performance would show gesture-sound performance patterns, and by engaging the performer, one can also include the gesture-sound intention.[152]

The reason for using this method is that some aspects of a performance can be handled from the third-person perspective, while others could not. In the case of studying the patterns of a performer's gestures and its intentions, Caruso and others used modern technology to measure aspects such as gestures and sound, while including the account of the performer for the intentions of performing them. The combination of perspectives from different angles can then provide a more comprehensive view of the study.

[151] Giusy Caruso and others, 'Gestures in Contemporary Music Performance: A Method to Assist the Performer's Artistic Process', *Contemporary Music Review*, 35.4–5 (2016), pp. 402–22 (p. 406), doi:10.1080/07494467.2016.1257292.
[152] Ibid., p. 407.

While the authors included a third-person perspective using modern technology, they emphasised the importance of the performer's input as a 'crucial element in the interpretation of technology-generated observational data'[153] for reasons such as subjectivity, interpretation or aesthetic values of the performer. As Caruso and others said, 'while movements may seem similar in the physical dimension, they may differ in the subjective and the social dimension'.[154] It is also said that '[f]rom an insider's view, the performer can describe the lived experience and the social frames this experience is embedded in'.[155] Therefore, the inclusion of the performer's view in addition to empirical data provides a more complete picture with additional context, which helps an external reader understand the reasoning behind the obtained data. The paper also noted that 'the subjective experience and social relations are important aspects of a performance, being reflected in the performing body as the nexus of decoding and coding musical intentionality'.[156] This shows the importance of input from both perspectives, as considering only one perspective would cause one to overlook important details in the phenomenology of piano playing.

To assist the process of obtaining the first-person perspective, the incorporation of modern technology provides an opportunity for the performer to 'observe and analyse the enactment process in a more explicit, elaborate, and detailed way', contributing to an 'elaborate–insider–view' on the obtained data.[157]

[153] Caruso and others, 'Gestures in Contemporary Music Performance', pp. 408–09.
[154] Ibid., p. 408.
[155] Ibid., p. 409.
[156] Caruso and others, 'Gestures in Contemporary Music Performance', p. 407.
[157] Caruso and others, 'Gestures in Contemporary Music Performance', p. 410.

According to Caruso and others, it also evokes the sense of awareness of the performer when describing the explicit process that happened in a performance.[158]

The paper by Caruso and others integrated the third-person perspective, such as the tracking of movements and gestures, with first-person input such as intentionality, and showcased a leading research direction on body movements that emphasizes input from both perspectives. The different perspectives, complementary to each other, are useful in constructing and developing a well-balanced viewpoint on the research topic, as each perspective would cover input that the other could not obtain.

1.4 Structure and Steps of Artistic Process

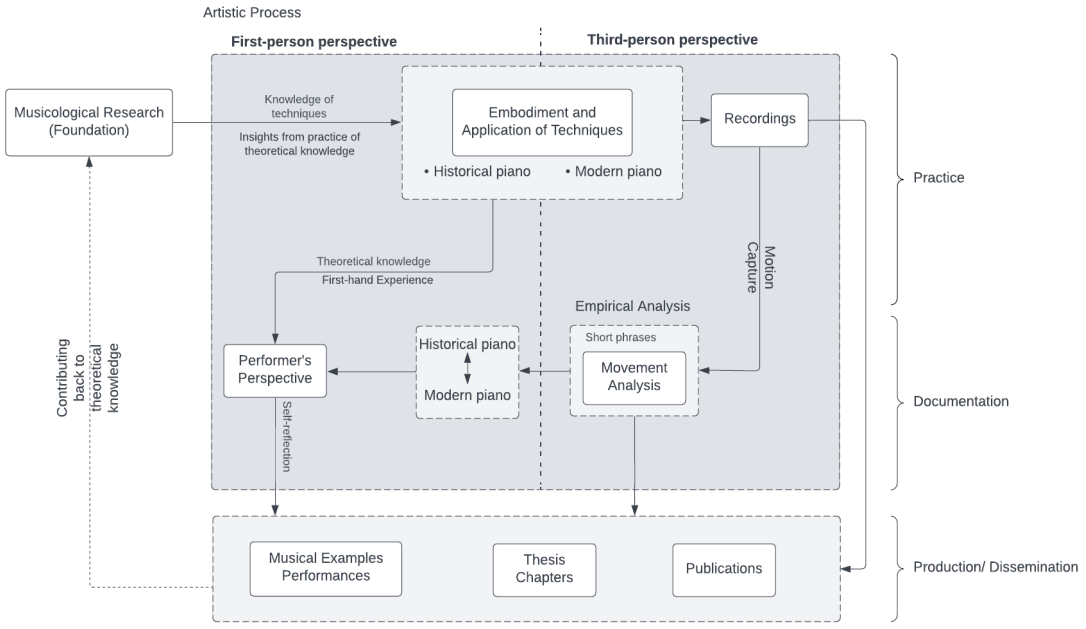


Figure 1.1. Steps in the Artistic Process

[158] Ibid., p. 411.

As the theoretical and musicological knowledge was applied in the practical paradigm of artistic practice, I used performer-based analysis comprised of mixed methodology of both qualitative and quantitative data through the technology-enhanced mirror technique (motion capture, in this case), providing two contrasting perspectives of the first and third person. The whole artistic process can also be categorized into three domains — practice, documentation, and production (see Figure 1.1).

1.4.1 Practice

The artistic process began by materializing the theoretical knowledge gained through musicological research, for a deeper meaning and better understanding of the knowledge in practice. This stage of the artistic process includes the experimentation and embodiment of the researched techniques through preliminary applications on short phrases. With careful attention, I followed the instructions from treatises and technique books, especially in learning techniques prioritised and emphasized by the pedagogues, performing and experimenting with the described steps of physical instructions on a modern piano. Their instructions were mainly interpreted from my point of view as a performer, supplemented by relevant sources. In doing this, the consciousness and awareness of the performer when performing the techniques is crucial. In Doğantan-Dack's research about Beethoven's dynamics, she mentioned the correlations between musical parameters and performance expression that started to develop in the nineteenth century, and this can be seen especially between melodic contours and dynamics, whereby rising contour will be associated with *crescendo*, and descending, *decrescendo*.[159] Hence, performers used to these correlations, were

[159] Doğantan-Dack, 'Performing Beethoven's Musical Dynamics', pp. 9–10.

able to perform dynamics even without any notations of the music. One of the most significant implications of this would be the automatism of the body, similar to executing daily tasks, as Doğantan-Dack mentioned in her paper.[160] Just as the many dynamic variations that performers apply on tonal music have become natural and instinctive to them due to factors such as tradition and practice, the same could be said for techniques of a performer.

This can also be said to resemble what is commonly termed today as muscle-memory or auto-pilot playing, where the muscles or body parts move without engaging the conscious mind. In relation to this, the same could perfectly describe the techniques that we have been learning and using. A pianist would not need consciously to think about how to move their hands when learning a new piece, as the fundamentals have been engraved in the body such that we could move our fingers without thinking. However, this would not be the case when acquiring new knowledge and using new techniques. As a researcher-performer, it is apparent that the process of learning and applying these researched techniques for this study requires one's conscious awareness.

In Beethoven's Piano Trio Op. 70 No. 2 in E flat major, which Doğantan-Dack thought had unusual dynamics, for example, the *crescendo-subito piano*, disrupted the ingrained habits of performers in rendering dynamics.[161] Doğantan-Dack related this phenomenon to the notion of Maine de Biran (1766–1824), a French philosopher that challenged the Cartesian model and emphasized an important point that 'the individual will is related to the muscle sense, and that the

[160] Ibid.
[161] Doğantan-Dack, 'Performing Beethoven's Musical Dynamics', pp. 17–18.

foundations of the self are thereby located in the body, or more specifically in the feeling of resistance the world presents to our movements, which the mind encounters as volition'.[162] To draw a parallel between Beethoven's unusual dynamics, and the newly learned historical techniques, Beethoven's dynamics prompted some sense of awareness in the performer and freed them from the normality where the body acted as a transparent carrier,[163] requiring the combination of the mind and the physical body. Similarly, learning and embodying a different set of techniques such as the researched historical techniques that are different from our own would also require challenging the Cartesian model where the mind and soul are seen as separate entities.

As a pianist who has experienced learning using both methods — muscle memory (reflecting the Cartesian model) and with mind engagement (reflecting the anti-Cartesian perspective) — I believe one can be aware of their own labouring when learning something new, especially when the memory is fresh. Possessing a set of techniques prior to encountering these researched techniques made Biran's concept[164] the only way to differentiate and compartmentalize the researched techniques from my own. It was easy to revert to my own techniques as it was the same set of techniques that I have used for the past 20 years. Therefore, using Biran's concept of the body with engagement of the brain and mind in the process of learning historical techniques not only ensured one's awareness and consciousness, but in this case, also deepen the understanding of the techniques and movements. With the limited time available to a researcher-performer to learn and apply new techniques,

[162] Doğantan-Dack, 'Performing Beethoven's Musical Dynamics', p. 13.
[163] Doğantan-Dack, 'Performing Beethoven's Musical Dynamics', p. 19.
[164] Doğantan-Dack, 'Performing Beethoven's Musical Dynamics', pp. 12–13.

relying on muscle memory would not be ideal. Therefore, as a performer-researcher, I adopted the concept where the mind and body are one in the embodiment process, to ensure that my awareness of the physical body and consciousness is maintained throughout, while compartmentalizing the different techniques to the best of my ability.

Through the practice of nineteenth-century techniques, their effects such as the change in my body movements along with different sensations, effort levels, and mobility emerged. To study the differences between techniques, my own techniques and historical techniques were both applied on some short phrases for comparison.

After the preliminary study and comparison of these historical techniques on a modern piano, I placed the main subject of the research — historical techniques — within the setting of historical instruments. The use of nineteenth-century techniques on historical instruments gives insight on the instructions and provides an opportunity to observe how the techniques adapt on different instruments. Applying the researched techniques on historical instruments also helps uncover knowledge that may not emerge on a modern piano. The re-enactment of nineteenth-century techniques on historical piano led to the understanding and discovery of the role and effect of the techniques, the relationship between them, and the reason behind these instructions, providing more context to the techniques.

The discoveries from attempting the researched techniques on both modern and historical piano demonstrated some differences in their useability, effects, and the interactions between instruments. Therefore, in the final phase, I incorporated the

historical techniques into my modern piano playing, integrating them with my own techniques for a cohesive and full-length video recording of the selected pieces.

In the final stage of artistic practice on the modern piano, the researched historical techniques were more contextually informed, and a number of historical techniques or concepts were integrated into the same pieces on modern piano, re-imagining the researched techniques beyond historical instruments into mainstream piano playing.

1.4.2 Documenting the Process of Learning, Embodiment, and Application

While awareness of mind and bodily sensation could only be felt and experienced first-hand by the performer, the observation and reflections of these experiences are an important and useful perspective that needs to be included alongside the 3D motion tracking of the body in this study. By leveraging the advantages and strengths of the two perspectives, in hopes of supplementing the shortcomings of each viewpoint, this research will prioritize the performer's perspective and support it with empirical data from motion capture. Therefore, the second stage — documentation — would involve extracting information from the process of learning, embodiment, and application through the first- and the third- person perspectives.

To obtain a third-person perspective, the short phrases were recorded at least three times, each using both my own techniques and historical techniques. The recording setup involves two cameras, one on the top left corner and one on the top right corner of the piano, to enable a more comprehensive view of the performer, which would also serve as a valuable source of information for third-person

examination. These recordings present the effects of the techniques on a modern piano, and were therefore included in the dissertation as part of the demonstration of different approaches. Along with these recordings, I also included the tracked motion paths of parts of the hand such as the wrist, or elbow that are of interest. These short recordings can then be studied as videos or, with the aid of Machine Learning (ML) and Motion Capture systems, motion paths. As these differences in movements are visible and quite consistent in practice, only a small sample size was used in the empirical section. The quantitative data provides a more detailed inspection of the movements, and strengthens the findings made from the first-person perspective. Furthermore, these findings act as a 'mirror', as mentioned above, where the performer's body movements, techniques, and gestures can be studied through a third-person perspective. Therefore, the performer's body positions estimated through motion capture software, were integrated into the thesis to support the self-reflection process of the researcher-performer.

In terms of imperceptible inputs, the lived experience of the performer was also noted down when the techniques were being applied on both modern piano and historical piano. Introspections, feedback, and observations that are only available from the performer (for example, inward feelings, kinaesthetic sensations, the reaction of the hands and fingers, as well as the reaction of the piano) were documented through self-reflection logs after practice and recording sessions. The combination of qualitative data from the first-person perspective and the quantitative data from visual analysis blended two different angles into the artistic process, allowing the documentation stage in the artistic process to be presented in both text and motion paths.

1.4.3 Production and Dissemination: The two-way route between research and practice

Finally, the artistic process of this research — the full experience of embodying nineteenth-century piano techniques by a twenty-first century pianist — will then be concluded through the stage of production and dissemination. The knowledge gained through this research (for example, the intricate details experienced by the performer, the relationship between nineteenth-century techniques, historical instruments, and body movements that arise only through practical applications), as well as the process of integration of historical techniques onto modern piano, are presented in the style of writings and video recordings; for example, thesis chapters, publications, and short and full-length video recordings of performances. Furthermore, all musical examples and performances included in the thesis were discussed in connection with the researched techniques, demonstrating a link between research and practice. The new knowledge gained through this artistic research is then returned and contributed to musicological discussion, offering new perspectives and probing further discussions.

Chapter 2 Framing the scope and contextualising the research

2.1 Preliminary Screening of Method Books from the Nineteenth Century

Prior to studying and researching nineteenth-century techniques, a few major treatises and books were selected to provide an overview of techniques in the nineteenth century.

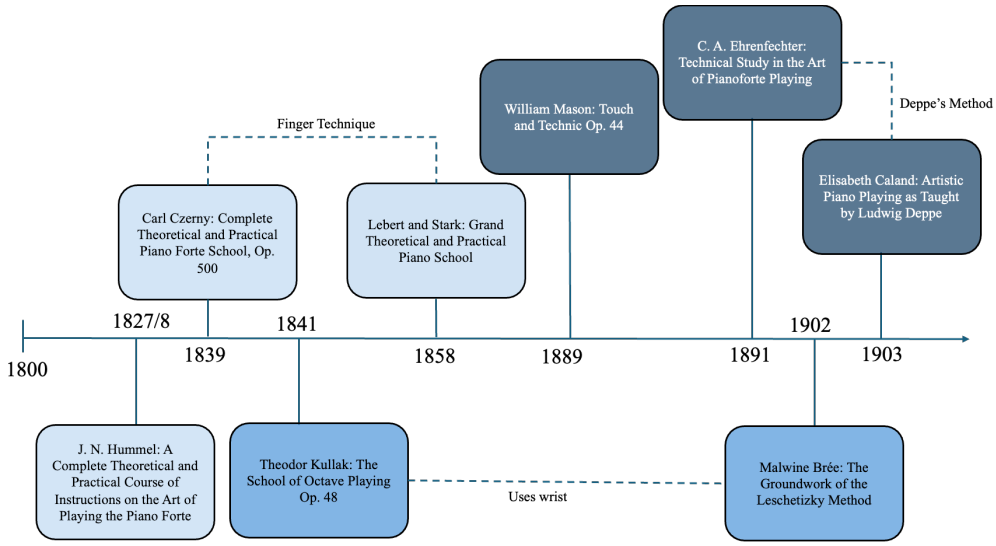


Figure 2.1. Timeline graph of the published books.

The timeline graph (Figure 2.1.) demonstrates that categorizing techniques based solely on their published date would not be ideal, as some books, while published decades apart, may have similar instructions or use the same concepts, while others published closer to each other can carry different approaches. Although published almost two decades apart, both Czerny's and Lebert-Stark's treatises carry comparable instructions including similarities in finger actions, posture, as well as

the emphasis of using a quiet hand,[1] but with one main difference; Lebert and Stark went to the further end of the extreme by suggesting the use of a hand guide.[2] To avoid redundancy and any unwanted injuries, only Czerny's techniques were taken into consideration and applied in the research.

While Hummel's techniques also focused on using the fingers, there were differences in hand positions and finger actions, leading to different playing methods when compared with the Czerny's techniques. As these two techniques existed alongside each other in the Classical period (further discussed in Chapter 2.3.1), both Hummel and Czerny's treatises were taken into consideration.

Leschetizky's and Kullak's methods also intersected with each other where both introduced the use of the wrist and mentioned techniques that require movements that originate from the wrist. While they agreed on the same concept, Kullak's book focused on octave playing. Hence, Leschetizky's instructions that introduced wrist exercises into general piano playing were chosen in this research and were later applied on sections such as *cantilena* melodies.

Although Mason and Deppe have rather different instructions, they have a common point of using the arm and the shoulder. Both Mason and Deppe's instructions which were published in the late-nineteenth and early-twentieth

[1] The term quiet hand refers to a playing style that emphasizes on keeping the hand still, and with minimal unnecessary movements in playing.
[2] Hand guide was one of the finger-strengthening devices attached to the piano. The device was invented to encourage finger independence, correct hand position, and prevent playing with arm or shoulder weight. See Beverly Jerold, 'The 19th-Century Piano and Finger-Strengthening Devices', *The Musical Times*, 162.1956 (2021), pp. 21–40 (p. 31–32), <https://www.jstor.org/stable/10.2307/27107865> [accessed 30 June 2025].

centuries, started exploring the use of the arm and different hand touches. These concepts were carried forward to the post-romantic period in the twentieth century where Matthay, Breithaupt, and Lhevinne used similar concepts, but added new ideas such as weight transmission, arm weight, and more touches. After some preliminary attempts and considerations in terms of the pieces used in this research, Deppe's techniques were chosen for this study, which will then be incorporated into one of Chopin's pieces. Deppe's technique which was seen as the pivotal point for modern techniques, was not only distinct from my usual techniques particularly in seat height and touches, they also shared some similar concepts with Chopin's touches (briefly explained in Chapter 2.3.2).

Table 2.1: Summary of the pedagogues and their books selected prior to this research.

	Publication	Emphasis	Hand and Body Movements
C. P. E. Bach	Essay on the True Arts of Playing Keyboard Instruments (first edition in 1753)	Avoids thumping and stiff hands. Equal facility of the right and left hand	Limited instruction on body movements.
J. N. Hummel	A Complete Theoretical and Practical Course of Instructions on the Art of Playing the Piano Forte (1827/8)	Hands turned outward. Elbows turned towards body but not pressing against it.	Avoid violent movements. Uses finger joints, move with lightness. Avoid habits such as biting the lips, nodding, or opening one's mouth
Carl Czerny	Complete Theoretical and Practical Piano Forte School, Op. 500 (1839)	Perpendicular finger movement. Finger knuckle to elbow form a straight line.	Avoid low seat. Still hands and natural inclination of upper body.
Theodor Kullak	The School of Octave Playing Op. 48 (1841)	Use of wrists. Lifting and depressing of hands.	Rise and fall of hands.
Lebert and Stark	Grand Theoretical and Practical Piano School (1858)	Finger exercises. Raising and falling of wrists. Use of hand guide.	Quiet arms. Elbow must point downward, near to the body. Elbow, wrist, and hand form a straight line.
William Mason	Touch and Technique Op. 44 (1889)	Finger, hand, and arm touches. Use of shoulder and arm.	Use of shoulder muscles, hand lifts, wrists, and arm movement.
Theodore Leschetizky	Malwine Brée: The groundwork of Leschetizky Method by (1902)	Use of wrist for *cantilena* melodies. Supple wrists. Relaxation to prevent hand fatigue.	Lowering and raising of wrists. Avoid posing or negative movements (e.g., leaning backwards, rolling eyes, and bending forward too much).
Ludwig Deppe	C. A. Ehrenfechter: Technical Study in the Art of Pianoforte Playing (1891) Elisabeth Caland: Artistic Piano Playing as Taught by Ludwig Deppe (1903)	Hand must be light as feather. Uses shoulder and arm muscles to carry the hand. Finger presses rather than strikes. Low seat.	Elbow close to the body, wrist elevated, and light hands. Shoulder sustains and carries the weight of arm. Curvilinear movements.

A summary of the researched books in Table 2.1 are listed in chronological order along with the necessary motions and their effects on body movements. These instructions were categorized in the timeline graph (Figure 2.1) to show the types of techniques and their emphasized approaches. The techniques covered in this research, along with their effects on body movements do not represent any one specific period, but rather an observation into the potential development of techniques through instructions on physical approaches of these well-known and widely distributed method books. It would also study how the changes in techniques and approaches support the change of body movements in a performance and the progression towards a freer body.

2.2 Timeframe of Researched Techniques

As this research focuses on the reimagination of nineteenth-century techniques including their roles and functions, implications on body movements, and their application on historical and modern pianos, materials that placed less emphasis on techniques, movements, and approaches, as well as books that focused on other areas such as self-listening and mental practice were excluded. Instead, this research will focus on the examination of the techniques published from around the 1820s to the beginning of the 1900s. The techniques published later in the twentieth century were also not included in the timeframe of this research, as the large number of pedagogical books with varied and diverse methods were too wide and broad to be included in this research. Furthermore, Julie Knerr noticed the limited explanation on technical instructions in many method books, where most major pedagogy texts from the end of twentieth century devote less than 9% to discussing piano techniques. They also contain fewer pages on subjects related to piano techniques in comparison

to older texts.[3] In terms of technique lineage, the master-student relationship in the twentieth century also became much more complex and is further exacerbated as travelling became more common and pianists who learned from several different teachers could have acquired an amalgamation of different techniques.

In the twentieth century, the trend started to shift. The techniques were not only more advanced than the first generation of Romantic composers, such as Leschetizky and Deppe, their instructions were developed further, with fewer restrictions, and seen to be closer to what we are familiar with today. Furthermore, the movements of the body were not limited to only the limbs such as the wrists, hands, arms, or shoulders. For instance, the use of the torso and the whole body were mentioned in Abby Whiteside's book.[4] These techniques were clearly a notch further than the techniques that emerged in the second half of the nineteenth century, and some can still be seen in a twenty-first century performance today.

While the late Romantic style dominated the beginning of the twentieth century, new forms and styles also started to emerge. Styles such as expressionism, impressionism, atonality, 12-tone compositions, neo classicism, primitivism, and jazz started to develop throughout the first half of the twentieth century.[5] The diversity of

[3] Julie Knerr, 'Strategies In The Formation Of Piano Technique In Elementary Level Piano Students: An Exploration Of Teaching Elementary Level Technical Concepts According To Authors And Teachers From 1925 To The Present' (unpublished doctoral dissertation, University of Oklahoma, 2006), p. 5 <https://hdl.handle.net/11244/1099> [accessed 18 November 2024].
[4] Abby Whiteside, *Abby Whiteside on Piano Playing: Indispensables of Piano Playing, Mastering the Chopin Etudes and Other Essays,* ed. by Joseph Prostakoff and Sophia Rosoff (Amadeus Press, 1997), pp. 31–33. The torso is also linked to upper arm movements such as push-off motions, torso bouncing, and other related actions in the book.
[5] Min Yeong Kim, 'A DMA Recording Project Accompanied by an Essay on Multiple Trends of Piano Music in the First Half of the Twentieth Century' (unpublished doctoral dissertation, University of Georgia, 2021), pp. 2–3 <http://www.proquest.com/docview/2627991633/abstract/F3585C571FDB4206PQ/1> [accessed 5 August 2022].

styles, trends, influences, and compositions in twentieth century music may call for different techniques, and these extensive modern techniques would require a separate study of their own.

After a brief review of the progression and development in techniques that took place in the nineteenth century progressing into the twentieth century, this research only included method books up to the beginning of the 1900s. While materials that provided less emphasis on technical instructions were generally avoided, later method and pedagogical books that teach techniques through physical movements would be used as references but will not be the focus of this research.

2.3 Contextualisation of the Research

2.3.1 Piano Techniques in the Early Nineteenth Century

The teaching of technique on the keyboard was normally performed on instruments such as the harpsichord and the clavichord before the 1800s,[6] with little mention of the fortepiano. In fact, the word *clavier* can refer to harpsichord, clavichord, or a piano.[7] Therefore, keyboard instruments were used interchangeably where a professional keyboard player in Mozart or Bach's time would have any of the aforementioned keyboard instruments at home.[8]

Despite targeting different keyboard instruments, the publication of C.P.E. Bach's prominent treatise in 1753, titled *Essay on the True Art of Playing on*

[6] Xiao Yang, 'Helping Developing Pianists Prepare for the Sonatas of Haydn and Mozart: A Sequenced Approach to Technique and Artistry' (unpublished doctoral dissertation, Texas Tech University, 2019), p. 56 <https://hdl.handle.net/2346/85249> [accessed 17 January 2023].
[7] David Breitman, *Piano-Playing Revisited: What Modern Players Can Learn from Period Instruments* (University of Rochester Press, 2021), p. 2.
[8] Ibid., p. 2.

Keyboard Instruments, went on to significantly influence other famous pianists and pedagogues in the Classical period.[9] For example, Bach's fingering was said to be the groundwork of modern technique (in 1949).[10] Haydn referred to the *Essay* as the 'school of all schools',[11] while Clementi, when credited for introducing the modern finger technique, said 'Whatever I know about fingering and the new style, in short, whatever I understand of the pianoforte, I have learned from this book'.[12] Furthermore, when Beethoven first listened to Czerny and decided to take him in as a student, he instructed that Czerny bring Bach's *Essay* to his lessons.[13]

The *Essay* provides brief instructions on the correct playing position, such as sitting at the middle of the keyboard (which would allow the performer to play both higher and lower octaves with the same ease), placing the forearms slightly above the keyboard, and playing with the fingers arched and muscles relaxed.[14] Similarly, it warns us of issues such as playing with stiffness, using flat and extended fingers, and hanging the thumb out of the way.[15] Although it was not written specifically for the fortepiano,[16] it could be said that it has established a strong foundation and contributed vastly to the techniques used in the second half of the eighteenth century

[9] Carl Philipp Emanuel Bach, *Essay on the True Art of Playing Keyboard Instruments*, trans. by William J Mitchell (W.W. Norton, 1949), p. 2 <https://archive.org/details/BACHCarlPhilippeEmanuel.EssayOnTheTrueArtOfPlayingKeyboardInstruments/mode/2up>.
[10] Ibid., p. 13.
[11] William J. Mitchell, 'C. P. E. Bach's "Essay": An Introduction', *The Musical Quarterly*, 33.4 (1947), pp. 460–80 (p. 461), doi:10.1093/mq/XXXIII.4.460.
[12] Bach, *Essay on the True Art of Playing Keyboard Instruments*, p. 14.
[13] Mitchell, 'C. P. E. Bach's "Essay"', p. 461.
[14] Bach, *Essay on the True Art of Playing Keyboard Instruments*, p. 42.
[15] Ibid., p. 43.
[16] It was hinted in the introduction of the *Essay* where it says: 'As keyboard style developed, as the pianoforte with its different action came into its own, certain extensions of technique were required' (see p. 13), and was noted later that, '[t]he more recent pianoforte, when it is sturdy and well built, has many fine qualities, although its touch must be carefully worked out, a task which is not without difficulties. It sounds well by itself and in small ensembles. Yet, I hold that a good clavichord […]' (see p. 36).

and can be seen as a stepping stone to the techniques published in the late-eighteenth century and the early-nineteenth century.

While a number of major treatises were produced at the time, not all have included detailed physical approaches and instructions of playing. For example, the treatise *Introduction to the Art of Playing on Piano Forte, Op. 42*, composed by Muzio Clementi in 1801, includes only brief playing approaches where Clementi stated that the seat should be adjusted accordingly, so that the wrist of a player can be held without being lowered or elevated.[17] The finger position and action also only briefly described that fingers should be curved and always in a prepared position over the keys without any unneeded motion.[18] He sees the result to be the most important component, and fingering is then constructed in such a manner that the result achieved is the best.[19] While Clementi was commonly referred to as 'the father of the pianoforte', being affiliated more strongly to the English piano and without a more detailed instruction of posture or basic physical approaches, it was challenging to reconstruct or re-imagine the techniques that would have been in use.

In 1827, Johann Nepomuk Hummel (1778–1837) wrote a treatise *A Complete Theoretical and Practical Course of Instructions on the Art of Playing the Piano Forte*. His treatise is comprised of 3 volumes, the first on elementary instructions that included sitting positions and the holding of body, arms, hands, and fingers. The second volume focuses on fingering, touch articulation, while the third volume on

[17] Muzio Clementi, *Introduction to the Art of Playing the Piano Forte Op.42* (London: Clementi, Banger, Hyde, Collard & Davis, n.d.), pp. 14–15 <https://vmirror.imslp.org/files/imglnks/usimg/4/43/IMSLP96189-SIBLEY1802.14461.d37a-39087009987472_(1-20).pdf >.
[18] Ibid.
[19] Ibid.

topics such as the subtleties and refinements of playing, the English and German piano action, pedals and many more. Hummel's playing style can be seen from his emphasis on the importance of a natural and relaxed method of playing, as well as his advice on refraining from violent movement of the elbows or hands, and not moving beyond the natural playing position of the hand.[20] Czerny described Hummel's playing, saying:

> Even though I had already so many opportunities to hear Gelinek, Lipavsky, Wolf, and even Beethoven, the playing of this homely fellow [Hummel] seemed like a revelation. Never before had I heard such novel and dazzling difficulties, such cleanliness and elegance in performance, nor such intimate and tender expression, now even so much good taste in improvisation[...] these compositions which I had known for a long time, seemed like a completely new world.[21]

On the other hand, Czerny also compared the playing of Beethoven and Hummel, stating that:

> While Beethoven's playing was remarkable for his enormous power, characteristic expression, and his unheard-of virtuosity and passage work, Hummel's performance was a model of cleanness, clarity, and of the most graceful elegance and tenderness; all difficulties were calculated for the

[20] Johann Nepomuk Hummel, *A Complete Theoretical and Practical Course of Instructions on the Art of Playing the Piano Forte,* 3 parts (T. Boosey, 1828), I, pp. 2–4 <https://urresearch.rochester.edu/institutionalPublicationPublicView.action?institutionalItemId=28625 > [accessed 2 March 2021].
[21] Carl Czerny and Ernest Sanders, 'Recollections from My Life', *The Musical Quarterly*, 42.3 (1956), pp. 302–17 (pp. 308–9).

> greatest and most stunning effect, which he achieved by combining Clementi's manner of playing, so wisely gauged for the instrument, with that of Mozart.[22]

Differences can be observed not only between Hummel and Beethoven, but also in Mozart's and Beethoven's playing style which are clearly distinctive from each other. According to Petra Somlai, although Beethoven's composition technique was ahead of time in the late Classical period, his distinctive playing technique existed alongside the famous Mozartean playing style, and the influence of the two styles was passed on and inherited by their respective students and devotees.[23]

As Hummel learned from Mozart during his childhood and stayed with him for 2 years around 1786 or 1787 to December of 1788,[24] Mozart would have undeniably influenced Hummel's playing style. According to Mark Kroll, Hummel had always identified himself as a student of Mozart throughout his life,[25] and also noted in a letter (1826) to his old friend, Johannes Sonnleithner, that Mozart completed the development of his talent during his (Hummel's) seventh to ninth years.[26] Having techniques that greatly represented that of Mozart's style, Hummel was considered 'the Modern Mozart of Germany'[27] and his treatise may include techniques that were passed down from Mozart to himself. On the other hand,

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[22] Czerny and Sanders, 'Recollections from My Life', p. 309.
[23] Petra Somlai, 'Two Viennese Piano Schools: Beethoven and Hummel', *Research Catalogue*, 2019 <https://www.researchcatalogue.net/view/555906/559358#fn1> [accessed 19 March 2021].
[24] Mark Kroll, *Johann Nepomuk Hummel: A Musician's Life and World*, ed. by Ivan Koska, 2nd edn (Music Centre Slovakia, 2022), p. 33.
[25] Ibid.
[26] Karl Benyovsky, *J. N. Hummel, Der Mensch und Künstler* (Bratislava: Eos, 1934), pp. 199–202, cited in Mark Kroll, *Johann Nepomuk Hummel: A Musician's Life and World*, ed. by Ivan Koska, 2nd edn (Music Centre Slovakia, 2022), pp. 33–34.
[27] Ibid., pp. 33–52.

Czerny being Beethoven's student who premiered all his Sonatas and was able to perform them by heart after Beethoven died, was considered to be among those who understood Beethoven's playing style.[28] The divergence that could be seen in their respective playing styles has also caused turmoil and debate in the public's opinion in Vienna.

The competition between Beethoven and Hummel became so intense that cliques emerged around them, the public opinion was divided into two, and parties that opposed each other were formed.[29] According to Somlai, Hummel's supporters thought that Beethoven abused the piano, while Beethoven's supporters said that Hummel's playing was monotonous.[30] This, again, demonstrated a divergence in playing styles and techniques between the two parties.

Despite the divergences, Hummel's playing style, closely linked to that of Mozart's, represented one of the important playing styles of the nineteenth century. His treatise, containing detailed instructions on physical approaches, made an excellent choice for this research to re-imagine his playing style and techniques, starting from body and hand postures. Similarly, the Beethovenian style, which was passed down through Czerny's teachings, is also equally important. Considering the different lineage of techniques, Czerny's approach is rather different from that of Hummel's where his performance of Mozart's C minor concerto K 491 was described as 'uncommonly fiery'.[31]

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[28] Somlai, 'Two Viennese Piano Schools: Beethoven and Hummel'.
[29] Kroll, *Johann Nepomuk Hummel,* p. 78.
[30] Somlai, 'Two Viennese Piano Schools: Beethoven and Hummel'.
[31] Suan Liu Lee, 'Czerny's Interpretation of Beethoven's Piano Sonatas' (unpublished PhD thesis, University of Wales Bangor, 2003), p. 6 <https://research.bangor.ac.uk/portal/files/20580722/null> [accessed 11 January 2024].

As established briefly earlier, that Czerny learned from Beethoven and that they have a tight relationship; Beethoven wrote a favourable testimonial for Czerny in 1805, and Czerny was also the soloist in the first performance of Beethoven's Fifth Piano Concerto in 1812.[32] Being Beethoven's student, Czerny's interpretation of Beethoven's music was also commonly considered in various aspects of musicological research such as his interpretation on Beethoven's piano sonatas,[33] or the metronome tempo indications and instructions for Beethoven's sonata for cello and piano,[34] to name a few. In terms of techniques, Czerny recalled that his first lessons with Beethoven were scales in all keys and technical fundamentals, such as hand and finger positions, the use of thumb which are yet to be known by most pianists, and the *legato* technique, which was one of the unforgettable features of Beethoven's playing for Czerny.[35]

Czerny published *The Complete Theoretical and Practical Piano Forte School Opus 500* in 1839. Although many studies and etudes by Czerny were passed down and are still popular today, it is unfortunate that Czerny's Op. 500 is not more readily available. It gave the clearest picture available of Czerny the teacher and musician,[36] and was also viewed as a pedagogical work that addressed left-hand techniques from basic to virtuosic levels.[37] When first published, his Op. 500 was

[32] Lee, 'Czerny's Interpretation of Beethoven's Piano Sonatas', p. 6.
[33] Lee, 'Czerny's interpretation of Beethoven's Piano Sonatas'.
[34] Peter Martens, 'Contemporary Performance of the Sonatas for Cello and Piano by Ludwig van Beethoven as Informed by Carl Czerny' (unpublished doctoral dissertation, Stellenbosch University, 2016) < https://core.ac.uk/download/188223432.pdf > [accessed on 18 November 2024].
[35] Czerny and Sanders, 'Recollections from My Life', p. 309.
[36] Gerig, *Famous Pianists & Their Technique*, p. 108.
[37] Ki Tak Katherine Wong, 'The Contribution of Carl Czerny to Piano Pedagogy in the Early Nineteenth Century.' (unpublished doctoral thesis, UNSW Sydney, 2008), p. 233, doi:10.26190/unsworks/17717.

made up of three volumes containing instructions ranging from body and hand position to scales and finger exercises, various touches, and Beethoven's works, to name a few. Among the three volumes of extensive instructions on these topics, his instructions on body movements were considerably detailed where he included instruction for seat height, placement of elbows, body and head position, and also instructions on placing the feet, arm, and fingers, among other things.

As teachers, both Hummel and Czerny were considered prime figures who contributed significantly towards the playing techniques of the next generation of pianists. Hummel's students included Ferdinand Hiller and Adolf Henselt,[38] while Czerny's students included Theodor Kullak, Theodore Leschetizky, and Franz Liszt,[39] to name a few. Among Czerny's students, Leschetizky and Kullak also wrote treatises on piano techniques and have further contributed to piano techniques in the nineteenth century.[40]

2.3.2 Transformations in Romantic Piano Technique

Piano techniques in the Romantic period were more widely discussed than in the Classical period. A few famous pianists who were associated with piano techniques in the Romantic period include Theodore Leschetizky, Ludwig Deppe, Theodor Kullak, Adolph Kullak, Franz Liszt, Frédéric Chopin, Sigismund Thalberg, and William Mason. While some of them wrote primary sources that described their own playing method or intended to do so but were ultimately unsuccessful, others were published later by their students.

[38] Kroll, *Johann Nepomuk Hummel*, pp. 218–19.
[39] Lee, 'Czerny's interpretation of Beethoven's Piano Sonatas', p. 8.
[40] 'The Forefather of Pianoforte Technic', *The Etude*, April 1927, p. 287.

In general, Romantic techniques emerged when pianists who learned Classical techniques tried to break free from the Classical style and attempted to incorporate new approaches. According to Donna Ruth Bashaw, pianists such as Chopin and Liszt broke free from the classical tradition of piano playing and used other parts of the body apart from fingers, such as the arm and even torso, which gave pianists today more freedom in playing.[41] While these two composers wished to write about their methods and playing approaches, they were not successful. Chopin did not finish his method book and begged his friend, Gutmann, to destroy the incomplete method book on his deathbed.[42] Fortunately, his teachings and playing approaches were documented by his students and subsequently published in a book titled *Chopin: Pianist and Teacher As Seen by his Pupils* by Jean-Jacques Eigeldinger,[43] where Chopin's pianistic practices were compiled through several sources such as his memoranda, correspondences, diaries and more.

According to Harold Schonberg (1986), Romantic touches were different than those used at the end of twentieth century as people who have heard Romantic pianists play emphasized that they never made an ugly sound, nor was the piano considered a percussive instrument.[44] The newer generation of pianists in the late twentieth century evidently used a different approach from the Romantic style. The

[41] Donna Ruth Bashaw, 'The Evolution of Philosophies and Techniques of Piano Pedagogy from 1750 to 1900 Traced Through the Teachings of C. P. E. Bach, Clementi, Czerny, Chopin, and Leschetizky' (unpublished master's thesis, California State University, Fullerton), p. 10 <https://www.proquest.com/docview/194148006/citation/27BD7F8436C04B70PQ/1> [accessed 4 February 2022].
[42] William Leslie Sumner, The Pianoforte (Macdonald and Jane's Publishers, 1978), p. 165.
[43] Jean-Jacques Eigeldinger, *Chopin: Pianist and Teacher: As Seen by His Pupils*, ed. by Roy Howat, trans. by Naomi Shohet, Krysia Osostowicz, and Roy Howat (Cambridge University Press, 1986).
[44] Harold C. Schonberg, 'Do Today's Pianists Have The Romantic Touch?', *New York Times*, 6 July 1986, section 2 <https://www.nytimes.com/1986/07/06/arts/do-today-s-pianists-have-the-romantic-touch.html> [accessed 4 August 2022].

Romantic techniques can be considered the fountainhead of the modern techniques, which were then gradually modified by newer generations as more pedagogical sources, compositions, and the modern piano emerged. Therefore, to investigate the approaches of the Romantic playing style, techniques from the mid-nineteenth century to the beginning of twentieth century (a period with notable evolution and transformation of technique), need to be examined.

While Mozart's style of playing used by Hummel was considered out of date in the Romantic period, Czerny's lineage of techniques was modernized by his disciples and new approaches were observed in terms of piano techniques. One of the examples can be seen through Leschetizky's playing method where he emphasized the use of wrist, even though it was not mentioned in Czerny's treatise.

Romantic techniques were also at times developed and inspired through external elements. For example, Mason found his techniques by watching Leopold de Meyer;[45] Leschetizky by watching Schulhoff's performances;[46] and Rubinstein by hearing Rubini's singing.[47] For Leschetizky and Rubinstein, these new insights to playing were for the same reason — to achieve a singing tone on the piano. Method books also showed that new techniques that emerged in the late-nineteenth century and early-twentieth century were closely connected to the singing tone. For example, Leschetizky's technique that involves the wrist was used especially in *cantilena*

[45] William Mason, *Memories of a Musical Life* (The Century Co., 1901), pp. 19–20.
[46] Annette Hullah, *Theodor Leschetizky* (Ballantyne & Co. Limited, 2013), pp. 5–6 <https://www.gutenberg.org/files/43915/43915-h/43915-h.htm> [accessed 14 February 2024].
[47] Eduard Zilberkant, 'Anton Rubinstein and the Nineteenth-Century Piano Sonata' (unpublished doctoral dissertation, Temple University, 1996), p. 10 <https://www.proquest.com/docview/304266561/abstract/C345E3AA7FB5488DPQ/1> [accessed 19 June 2024].

melodies, while Matthay's emphasis on producing a singing tone could also be traced within students of his legacy.[48]

Theodore Leschetizky — the great pianist of the Romantic era who studied under Carl Czerny — was often associated with the playing style of Beethoven, Czerny's teacher,[49] although differences can be easily observed. His method of playing, the Leschetizky method, is still discussed today. While he was known for his playing method, his techniques were mainly published by his students, Malwine Brée and Marie Prentner. Brée published *The Groundwork of the Leschetizky Method* in 1902,[50] and Marie Prentner published *Leschetizky's Fundamental Principles of Piano Technique* in 1903.[51]

Leschetizky was not just influenced by Czerny, he also had a broad range of experience. He was brought to Vienna by his father to study with Czerny in 1841 and went to St Petersburg Russia in 1852 where he worked with Anton Rubinstein. He also transferred his classes to the St Petersburg Conservatory in 1862, where the conservatory was under the musical direction of Anton Rubenstein at the time.[52] He later became famous as a pianist and a teacher where students from various parts of Europe wished to join his class.[53]

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[48] Julian Hellaby, 'Beautiful Piano Tone – A Matthay Legacy?', *Music & Practice*, 5, 2019, p. 1, doi:10.32063/0501.
[49] 'Theodor Leschetizky' , Britannica, n.d. <https://www.britannica.com/biography/Theodor-Leschetizky> [accessed 15 December 2020].
[50] Malwine Brée, *The Groundwork of the Leschetizky Method*, trans. by TH. Baker (G. Schirmer, Inc, 1902).
[51] Marie Prentner, *Leschetizky's Fundamental Principles of Piano Technique* (Dover Publications, 2005).
[52] Hullah, *Theodor Leschetizky*, pp. 2–13.
[53] Ibid., p. 14.

For a technique that emphasised highly on tone production, Brée covered a variety of styles of touches she learned from Leschetizky such as *legato*, *legatissimo*, *legato in cantilena*, finger *staccato* and wrist *staccato* in the book. She also covered the attitude at the piano, including seating position and the positioning of elbows. In later sections where hand postures were explained, wrist exercises were also included. It was apparent that the *legato* touch and the flexibility of the wrist were important aspects of Leschetizky's method. Not only does she include guidance regarding the movements of fingers, she also repeatedly mentioned the wrists while explaining the different touches, usually in relation to tension, stiffness, and relaxation. Similarly, Eigeldinger's book that describes Chopin's playing also mentioned techniques such as suppleness, the flexibility of wrist and hand, and the *legato* touch.[54] Tone colour and *legato* style playing were very much mentioned to Chopin's students as he was a pianist who loved the *bel canto* singing style.[55] According to Georges Mathias and Isidore Philip, Chopin asked his students to practice at a slow tempo, maintaining *legato*, as well as a full tone.[56] In Chopin's piano playing style, '[…]the sustained melancholy sound, which — the fingers reluctant to leave the keys — is able to bring out from even the least melodious instrument a singing quality'.[57] This is similar to how Brée suggested to hold the finger a trifle longer after playing the next note to achieve a *legatissimo* effect.[58] Chopin's students mentioned that his tones always sing, and he was able to play wide-interval arpeggios with beautiful *legato* because he moves his wrists but not his

[54] Eigeldinger, *Chopin: Pianist and Teacher*, pp. 29–31.
[55] Ibid., p. 14. See also p. 44 and 111.
[56] Georges Mathias, 'Preface to Isidore Philipp', in *Exercices quotidiens tirés des oeuvres de Chopin* (Hamelle, 1897), p. 15, cited in Jean-Jacques Eigeldinger, *Chopin: Pianist and Teacher: As Seen by His Pupils*, ed. by Roy Howat, trans. by Naomi Shohet, Krysia Osostowicz, and Roy Howat (Cambridge University Press, 1986), p. 27.
[57] Eigeldinger, *Chopin: Pianist and Teacher*, p. 31.
[58] Brée, *The Groundwork of Leschetizky Method,* p. 29.

arm. Moreover, it is also mentioned by his students that his main concern throughout playing was to do away with stiffness.[59] These were also in line with Leschetizky's techniques where Brée mentioned the lowering and raising of the wrist to prevent the hand from growing stiff, and her instruction of reinforcing one's touch by using wrist-pressure for a full and strong tone in playing *cantilena* melodies.[60] As Chopin's piano works differ from the works from the Classical and Baroque periods, the style of playing used would need to complement his compositions that are expressive and requires flexibility. While Chopin did not publish any treatises, Leschetizky's techniques emphasized similar aspects of piano playing that Chopin valued.

In terms of touch, the idea of '[t]he fingers should sink, immerse themselves somehow in the depths of the piano', to '[c]aress the key, never bash it!', and, as Chopin's pupil would say, '[…] mould the keyboard with a velvet hand and feel the key rather than striking it!',[61] were Chopin's approach to pressing a key. A similar ideology of letting the finger fall from its own weight into the key rather than striking was also emphasized in Ludwig Deppe's approach, according to *Artistic Piano Playing as Taught by Ludwig Deppe Together with Practical Advice on Questions of Technique* by Elisabeth Caland in 1903.[62]

In contrast to having a clear lineage where pianists study and learn from a particular teacher, Ludwig Deppe did not follow a specific lineage but experimented and developed his own techniques. His method was discussed in numerous books

[59] Eigeldinger, *Chopin: Pianist and Teacher*, p. 29.
[60] Brée, *The Groundwork of Leschetizky Method*, p. 5 and p. 29.
[61] Eigeldinger, *Chopin: Pianist and Teacher*, p. 31.
[62] Elisabeth Caland, *Artistic Piano Playing as Taught by Ludwig Deppe Together with Practical Advice on Questions of Technique*, trans. by Evelyn Sutherland Stevenson (G. Schirmer, 1903), p. 29 <https://catalog.hathitrust.org/Record/100340903> [accessed 4 April 2023].

published by his students. In addition to Caland's book, *Technical Study in the Art of Pianoforte-playing (Deppe's principles) with Numerous Illustrations* by C. A. Ehrenfechter published in 1891,[63] and *Music Study in Germany* by Amy Fay[64] also discuss Deppe's method. While he studied with an amateur piano teacher, he was mainly self-taught, which allowed him to develop his own approach in piano playing.[65] Some of his principles were also recognized by his contemporaries, including William Mason, Adolph Marx, Adolph Kullak, and even Friedrich Wieck, however, physically damaging concepts were also said to have been blended into their approaches.[66] On the other hand, Deppe's concepts and principles of using free and relaxed body parts were contradictory to some other method books written, such as Lebert's and Stark's method.[67] Scholars believed that Deppe's techniques led the way to most modern twentieth century piano techniques,[68] while Gerig stated that Deppe was the pioneering teacher who combined the arm with finger technique.[69]

Amy Fay, who went to Germany from America, mentioned in her letter from Berlin in December 1873, that she gave up learning from Kullak and started studying under Deppe,[70] whom she believed developed a school of his own.[71] Fay mentioned her unexpected journey of going back to basics after four years abroad learning with

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[63] C.A. Ehrenfechter, *Technical Study in the Art of Pianoforte-Playing (Deppe's Principles) with Numerous Illustrations* (W. Reeves, 1891) <http://onlinebooks.library.upenn.edu/webbin/book/lookupid?key=ha008699445> [24 January 2023].
[64] Amy Fay, *Music Study in Germany*, ed. by Melusina Fay Peirce, 9th edn (A. C. McClurg, 1886) <https://vmirror.imslp.org/files/imglnks/usimg/7/72/IMSLP529496-PMLP856450-musicstudyingerm00faya.pdf>.
[65] Tom J Novara, 'A Comparative Analysis of the Writings and Technical Approach of Ludwig Deppe and His Contemporaries in Piano Pedagogy' (unpublished master's thesis, Southern Illinois University Carbondale, 2015), p. 1 <https://opensiuc.lib.siu.edu/cgi/viewcontent.cgi?article=1804&context=gs_rp>.
[66] Ibid., p.4.
[67] Ibid., p.4.
[68] Ibid., p. ii.
[69] Gerig, *Famous Pianists & Their Technique*, p. 236.
[70] Fay, *Music Study in Germany*, p. 283.
[71] Ibid., p. 295.

the ‘greatest masters’. She started again from the very first principles, while foregoing her existing way of holding the hand with curved fingers and lifting them very high when she decided to study with Deppe.[72] Deppe was very opposed to this way of playing as lifting the fingers high and striking would cut off the singing quality and produce a blow on the key. Instead, Deppe would say ‘Don’t strike but let the fingers fall’, which Fay believed was the secret of Liszt’s technique in playing melodies; the result would not be too loud, but very penetrating.[73] She also commented that Deppe sat on low chairs for a good tone.[74] These instructions were also reflected in Caland’s book.

While Ludwig Deppe published a German article titled ‘Ailments of the Arm among Pianists’ that addressed the lack of teaching that helped prevent strains and tensions, and the low seat concept that would directly affect one’s arm posture and tone production,[75] he also divulged his plan for large volumes of piano studies that included finger exercises and exercises for strengthening the shoulder and arm. However, he passed away before they were published.[76]

His techniques can still be pieced together mainly through Caland, Ehrenfechter, as well as Amy Fay’s depiction of her experience in learning from Deppe. Both Caland and Ehrenfechter’s books contain basic physical instructions to Deppe’s playing approach including seat height, position of the hand, arms, and wrists, as well as touch and tone. Among these, Caland’s book, where she attempted

[72] Ibid., pp. 287–88.
[73] Fay, *Music Study in Germany*, p. 288.
[74] Ibid., p. 293.
[75] Gerig, *Famous Pianists & Their Technique*, p. 253.
[76] Ibid., p. 252.

to arrange and complete Deppe's notes and records after his passing, was a continuation of his wish that his works were written down and kept permanent.[77]

However, we could infer that piano techniques may have experienced several changes and divergences to the extent that techniques from the Romantic period became almost foreign to pianists in the late twentieth century. Reflecting on comments made by pianists from the early twentieth century, the techniques used by many twentieth century pianists were said to be lacking compared to Romantic pianists.[78] Schonberg said that the way of playing Romantic pieces needed to be taught to the new generation, especially when pieces were brought back during the neo-Romantic movement, but not many teachers understood Romantic conventions.[79] Therefore, it was only normal that working as a juror in piano competitions, Schonberg 'complained' that the participants were talented and well prepared but had 'so little to say in one major segment (Romantic music) of the repertory'.[80] He commented that competitors played in a hard, percussive manner, had no *legato*, ignored phrase marks, left out inner voices, and had no idea how to use the pedals. In regard to tempo, they were slower than a century ago.[81]

2.3.3 Performance Aesthetics: Grimaces and Body Movements

When studying the selected historical techniques, while some techniques differ from each other, one similarity that can be observed across techniques by Hummel, Czerny, and Leschetizky was the instruction against excessive body movements. The

[77] Caland, *Artistic Piano Playing,* p. 16.
[78] Schonberg, 'Do Today's Pianists Have The Romantic Touch?'.
[79] Ibid.
[80] Ibid.
[81] Schonberg, 'Do Today's Pianists Have The Romantic Touch?'.

same aesthetic on performance can be seen through pianists' thoughts on grimaces at the time. Mozart complained to his father in a letter on October 23–24, 1777, about Stein's daughter, and wrote:

> Regarding his little girl, whoever can see and hear her playing and does not have to laugh must, like her father, be made of Stein [Stone]. The sitting position is right up opposite the top notes, by no means in the middle, and thus one has more opportunity to move around and make grimaces. Her eyes roll. There are grins. When something comes twice, it is played more slowly the 2nd time. If it comes the third time, more slowly again. The arm has to be lifted right up when a run is played, and when the run is articulated, this has to be done by the arm, not the fingers, and that with truly great efforts, heavily and clumsily.[82]

He further commented that 'She could become something, she has genius, but this way nothing will become of her because she applies all her efforts to making the hand heavy.'[83] He also mentioned in the letter in which he convinced Stein of his playing style, and that he was able to play very expressively without grimaces. He wrote:

> He [Stein] was completely infatuated with Becché. Now he sees and hears that I play more than Becché; that I make no grimaces, and yet play so

[82] Wolfgang Amadeus Mozart, 0355 letter to his father, Salzburg, 23–25 October 1777, in *Digital Mozart Edition,* <https://dme.mozarteum.at/DME/briefe/letter.php?mid=919> [accessed 26 January 2024].
[83] Ibid.

expressively that so far no-one, on his own admission, has known how to handle his piano forte so well.[84]

While Czerny has a rather different approach to producing a more powerful touch when compared to Hummel's techniques, both pedagogues agreed on avoiding unnecessary movements of the hands. Czerny stated that 'we may play with great power, without any excessive exertion, and without using any unnecessary and ridiculous movements of the hands, arms, shoulders or head.'[85] He was also against contortions and grimaces such as 'elevating their knuckles so much that the hand seems to form waves, like troubled waters', 'manifest(ing) their feelings by widely jerking out their elbows', 'mark(ing) the commencement of every bar by making a low bow with their head and chest', or 'after every short note, suddenly take up their hands as far from the keys as if they had touched a red-hot-iron'.[86] Similar concepts were also expressed in Leschetizky's techniques, showing consistency in quiet body movements. Brée, apart from including theoretical explanation, also expressed her distaste for posing. Instead, she advocated for the graceful look that was needed.[87] These examples above showed us the aesthetic value of the performing culture in the nineteenth century, that are also closely linked to playing techniques. Not only that, some pedagogues and pianists believed that there is a link between the desired tones and one's techniques, physical postures, and movements. Just as Chopin, as cited in Eigeldinger, noted that:

[84] Ibid.
[85] Carl Czerny, *Letters to a Young Lady, on the Art of Playing the Pianoforte, from the Earliest Rudiments to the Highest State of Cultivation: Written as an Appendix to Every School for That Instrument*, trans. by J.A. Hamilton (R. Cockes & Company, 1848), p. 29.
[86] Czerny, *Letters to a Young Lady*, p. 30.
[87] Brée, *The Groundwork of the Leschetizky Method*, p. 1.

> One needs only to study certain positioning of the hand in relation to the keys to obtain with ease the most beautiful quality of sound, to know how to play long notes and short notes, and to attain unlimited dexterity.[88]

And another student of Schnabel, Leon Fleisher, puts it in this way:

> It's your musical ideas that form or decide for you what kind of technique you are going to use. In other words, if you are trying to get a certain sound, you just experiment around to find the movement that will get this sound. That is technique.[89]

Hummel and Czerny, being two of the influential pedagogues on piano techniques in the first half of nineteenth century, as well as Leschetizky and Deppe from the late-nineteenth century, have published well described instructions compared to other treatises of the time. These treatises provide an opportunity for us to reimagine the taught postures, touches, and ultimately, playing techniques, forming the foundation of each pedagogue's technique.

This PhD, apart from using the physical instructions as a guide, also establishes and ensures the relevance between the techniques and the pieces selected. Hummel's techniques and playing style — similar to that of Mozart due to his technique lineage of learning directly from Mozart — were applied and demonstrated through the first movement of Mozart's Sonata in D, K. 576. Czerny's technique, on the other hand, would be showcased through one of Beethoven's compositions, the

[88] Eigeldinger, *Chopin: Pianist and Teacher*, p. 29.
[89] Gerig, *Famous Pianists & Their Technique*, p. 4.

first movement of the Waldstein Sonata, while Deppe's touch and Leschetizky's use of wrists being similar to Chopin's playing style, would be presented through Chopin's *Andante Spianato et Grande Polonaise*.

2.3.4 Compositions and Historical Instruments

Compositions and instruments also directly influence the outcome of a performance. For example, according to Hazel Iona Craig, the Viennese fortepiano which had a light mechanism was suitable for a rapid playing style and executions of arpeggio. However, the English fortepiano, with its deeper key fall and more sonorous tone, was more suitable for larger forms and brilliant executions.[90] In a case study by Marinho and Carvalho, where a performer and a composer collaborated in composing for a fortepiano and modern piano, textures of some of the accompanying bass lines were found to not be dense enough due to the rapid decay of the fortepiano's action, and thus needed to be doubled using octaves.[91] This also demonstrated the close relationship between the composition and the instrument.

To study the core of this research — historical techniques — in a more in-depth manner, the instruments, which these techniques were performed on, needed to be taken into account. Among the types of pianos developed in the eighteenth century, the Viennese and English pianos were the two most distinct.[92] The

[90] Hazel Iona Craig, 'The Development of the Pianoforte Technic from Haydn to Liszt' (unpublished undergraduate thesis, University of Illinois, 1913), p. 5 <https://www.ideals.illinois.edu/items/94426/bitstreams/306072/data.pdf> [accessed 18 November 2024].
[91] Helena Marinho and Sara Carvalho, 'From Fortepiano to Modern Piano: A Case Study of a Performer Composer Collaboration', in *Performer's Voices Across Centuries and Cultures: Selected Proceedings of the 2009 Performer's Voice International Symposium,* ed. by Anne Marshman (Imperial College Press, 2012), pp. 177–90 (p. 182).
[92] Jayson Kerr Dobney, 'The Piano: Viennese Instruments', *The Met's Heilbrunn Timeline of Art History,* 2009 <https://www.metmuseum.org/toah/hd/vien/hd_vien.htm> [accessed 6 April 2021].

'instrument', as mentioned in many articles, that helped us better understand the works of the period, was usually referring to the Viennese fortepiano.[93]

One example of the Viennese action piano would be the Stein fortepiano. It was well-liked by Mozart and other musicians of the time and was already in great demand even before they moved their operation to Vienna.[94] Mozart wrote in his letter that he now much preferred Stein's instrument than Spath's claviers as the sound of Stein's fortepiano ceases the moment when he strikes a key, no matter if he kept his finger on the note or raised it.[95] Mozart also liked the Walter fortepiano, also a Viennese action fortepiano, and had one especially made for him before 1784.[96] The Viennese action pianoforte was used by other pianists such as Haydn and the young Beethoven,[97] and was liked by Viennese audiences as it had a clear and ringing tone produced by its bouncing action.[98]

The English pianoforte on the other hand, had a pushing action and therefore did not offer the quick and snappy feel of the Viennese action.[99] According to Newman, the English action 'was much heavier than Viennese action, but also more expressive and dynamic'.[100] The 'after ring' of the Viennese and English pianoforte also presented notable differences. The dampers of the English pianoforte were less

[93] Bart van Oort, 'Haydn and the English Classical Piano Style', *Early Music*, 28.1 (2000), 73–89 (p. 73).
[94] Gerig, *Famous Pianists & Their Technique*, p. 38.
[95] Ibid., p. 39.
[96] Ibid., p. 40.
[97] Dobney, 'The Piano: Viennese Instruments'.
[98] Jun-Hee D. Han, 'Performing Beethoven's Piano Sonata in C Minor, Op. 111 on the 1816 English Broadwood Pianoforte' (unpublished D.M.A., The University of Wisconsin - Madison, 2021), p. 63 <http://search.proquest.com/docview/2490728078/abstract/E1BAC7DA24144FFDPQ/1> [accessed 7 April 2021].
[99] Ibid, p. 76.
[100] Ibid, p. 64.

efficient as they had the same sized dampers for the treble and the bass, which resulted in an 'after ring' that was longer in the bass than in the treble,[101] and consequently reduced the clarity of the tone. On the other hand, the Viennese fortepiano that used a wedged-shaped damper for the bass and flat pad dampers for the treble may not have the same issue. As Gerig wrote:

> Surely it was Mozart who defined the ideal Viennese piano technique in superlative fashion: an extremely smooth-flowing touch — *leggiero*, immaculate, clear; a tone quality that was always refined and *cantabile* in melody passages; a physical approach that ruled out all affectation and unnecessary movement — still largely the finger and hand technique of the harpsichord; an interpretation always in the best of taste with moderation shown in matters of tempo, *rubato* and dynamics, and elegance in phrasing. It should be emphasized that Mozart inherited a basic non-*legato* style of playing from the harpsichord era.[102]

In researching Hummel's technique and applying it to a Mozart sonata, it became clear that it would be most appropriate to apply it on a Viennese fortepiano.

Although Beethoven had a rather different set of techniques from the Mozartean style of playing, Czerny mentioned that Beethoven used a Walter fortepiano, a Viennese action fortepiano, in his lodging when he first played for him.[103] According to Gerig, Beethoven liked the Broadwood, an English fortepiano,

[101] van Oort, 'Haydn and the English Classical Piano Style', p.75.
[102] Gerig, *Famous Pianists & Their Technique*, p. 52.
[103] Gerig, *Famous Pianists & Their Technique*, p. 99.

more than the Viennese fortepiano.[104] However, eleven of the fourteen pianos that Beethoven supposedly owned were made by Viennese piano makers; Beghin further added that the number should be twelve, as the piano by Sebastian Vogel — one of the fourteen pianos — was also a Viennese design. [105] This led Beghin to conclude that 'Beethoven retained his "allegiance" to Viennese pianos and pianism throughout his life'.[106]

According to Skowroneck, Beethoven's only French piano, the 1803 Erard piano was the inspiration for some of his compositions,[107] including the Waldstein. Moreover, he conjectured that playing Beethoven's compositions composed between op. 37 and 79, where he had his Erard piano, especially the Waldstein sonata, on an instrument similar to the Erard, 'will reveal aspects of Beethoven's composition that would otherwise remain hidden'.[108] However, after a number of modifications to his Erard, Beethoven announced the instrument as 'simply not of any use anymore, of none whatsoever' and 'now really unusable'.[109] Fortunately, researchers such as Beghin and his team succeeded in building an exact replica of Beethoven's 1803 Erard piano in a recent project.[110] However, during the stage of my research where I applied Czerny's techniques on historical instruments (in January 2022), the closest accessible historical instrument representative of Czerny's time was the 1826 Graf

[104] Gerig, *Famous Pianists & Their Technique*, p. 99.
[105] William Newman, *Beethoven on Beethoven: Playing His Piano Music His Way 1988*, (W. W. Norton, 1998), pp. 45, 50, and 63 cited in Tom Beghin, *Beethoven's French Piano: A Tale of Ambition and Frustration* (The University of Chicago Press, 2022 pp. 8–9.
[106] Tom Beghin, *Beethoven's French Piano: A Tale of Ambition and Frustration* (The University of Chicago Press, 2022 p. 9.
[107] Tilman Skowroneck, 'Beethoven's Erard Piano: Its Influence on His Compositions and on Viennese Fortepiano Building', *Early Music*, 30.4 (2002), pp. 523–38.
[108] Ibid., p. 535.
[109] Skowroneck, 'Beethoven's Erard Piano', p. 525.
[110] Tom Beghin, 'Beethoven and His 1803 Erard', *Orpheus Institute*, February 2022, <https://orpheusinstituut.be/en/beethovenerard> [accessed 26 January 2024].

piano. Not only that, as Beethoven's Waldstein sonata is used in this research, it should be noted that one of the instruments that was in Beethoven's possession was a piano by Konrad Graf that was lent to him in 1825. The experimental piano was equipped with four strings for every key and was built in a more heavy and solid manner.[111] Given the alignment of instrument with the pedagogue and the composer of the piece used, as well as the availability and accessibility of the instrument, it was decided that Czerny's techniques would be demonstrated using Beethoven's *Waldstein* on an 1826 Graf piano.

Progressing from the Viennese and English fortepianos, many pianos built in the Romantic period differed from those of the Classical period as more inventions and developments were added to the instrument. Some of these developments were added through requests from composers from the nineteenth century,[112] while others were inspired by popular interest in opera and symphonic music, where it allowed the piano to imitate those effects.[113] For example, the double escapement mechanism by Erard allowed pianists to play repeated single notes in rapid succession, to mimic the tremolo played on a violin,[114] and it was this development that inspired Liszt to compose his Transcendental Etudes.[115] Apart from the double escapement mechanism, other developments of the pianoforte in the nineteenth century included iron wires by Broadwood, metal-frames by Babcock, and felt hammers by Pape.[116]

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[111] Gerig, *Famous Pianists & Their Technique*, p. 100.
[112] Alan Davison, 'Franz Liszt and the Development of 19th-Century Pianism: A Re-Reading of the Evidence', *The Musical Times,* 147.1896 (2006), pp. 33–43 (p. 34), doi:10.2307/25434402.
[113] Bashaw, 'The Evolution of Philosophies and Techniques of Piano Pedagogy from 1750 to 1900 Traced Through the Teachings of C. P. E. Bach, Clementi, Czerny, Chopin, and Leschetizky', p. 67.
[114] Ibid., p. 67.
[115] Seon Jeong Kang, 'Virtuosity in Piano Works of Franz Liszt in the Weimar Period: The Final Versions of Transcendental and Paganini Studies' (unpublished master's thesis, Univeristy of Tasmania, 2005), p. 4, doi:10.25959/23231063.v1.
[116] Kang, 'Virtuosity in Piano Works of Franz Liszt in the Weimar Period', p. 4.

Amongst the piano makers of nineteenth century Europe, Pleyel and Erard were two of the most important.[117] Chopin used to play on an Erard piano in his early years of residing in Paris, however, when gifted an instrument by his friend Camillo Pleyel, he stood by his Pleyel piano, and would even send his own instrument to the venue he was set to perform if no Pleyel piano was available.[118] Chopin's first debut on a Pleyel piano can be traced back to 1832 where he performed in the salons of Messrs Pleyel & Co. Since then, Pleyel would lend his instruments and salons to Chopin, who would then promote them to his students.[119] The well-known quote — 'When I feel out of sorts, […] I play on an Erard piano where I easily find a ready-made tone. But when I feel in good form and strong enough to find my own individual sound, then I need a Pleyel piano' — also further confirmed the preference of Chopin's instrument.[120]

Therefore, the techniques from the late-nineteenth century such as Deppe and Leschetizky's, would be demonstrated through Chopin's *Andante Spianato et Grande Polonaise Brillante* on an Erard (1866) and a Pleyel (1842). Chopin joked that he has begun a polonaise with an orchestra, but without the beginning (the *Andante Spianato* section), in his letter to his friend Tytus Wojciechowski on 13th September 1830.[121] Also, according to Ewald Zimmermann, in the preface of the

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[117] Edmund M. Frederick, 'The "Romantic" Sound in Four Pianos of Chopin's Era', *19th-Century Music*, 3.2 (1979), 150–53 (p. 150), doi:10.2307/746286.
[118] Maurycy Karasowski, *Frederic Chopin: His Life, Letters, and Works*, trans. by Emily Hill, 2 vols (1879), II, p. 290 <https://www.gutenberg.org/ebooks/46573/pg46573-images.html> [accessed 26 January 2024].
[119] Jean-Jacques Eigeldinger, 'Chopin and Pleyel', *Early Music*, 29.3 (2001), pp. 388–96 (pp. 388–91).
[120] Eigeldinger, *Chopin: Pianist and Teacher*, p. 26.
[121] 'Andante Spianato and Grande Polonaise Brillante in E-Flat Major - Fryderyk Chopin', *Culture.PL*, 2023 <https://culture.pl/en/work/andante-spianato-and-grande-polonaise-brillante-in-e-flat-major-fryderyk-chopin> [accessed 26 January 2024].

Henle Verlag's *Andante Spianato Grande Polonaise Brillante Op 22*, the *Polonaise* was written between 1830 to 1831.[122] Since the *Andante Spianato*, which precedes the *Grande Polonaise Brillante*, was composed later in 1834 or 1835 while Chopin was in Paris,[123] it is highly likely that he was already playing on a Pleyel piano at the time of its composition. In this research, I performed Chopin's *Andante Spianato* on both the Pleyel and the Erard piano, while his *Polonaise Grande Brillante* was only performed on the Erard due to the fragility of the restored Pleyel piano used in this study.

2.3.5 Differences Between Modern and Historical Instruments

The modern piano developed by Steinway around 1855, overcame the main drawback of the piano (any piano) — the decay of the tone. In order to produce a long singing line such that the percussion of the next note is blended as smoothly as possible, tremendous tension was placed on the strings, the hammers were made to be rather soft and large, and together with soft dampers that settle softly into the strings, made the piano sound as smooth as possible.[124] This also meant that a pianist needed to exert more pressure while playing the keys to produce a connected singing line.

As different mechanisms, materials, and piano actions were explored throughout the development of the pianoforte, they contributed to the changes in playing style of a pianist and led to differences in touch, exertion of energy, tone

[122] Frédéric Chopin, *Andante spianato und Grande Polonaise brillante Opus 22*, ed. by Ewald Zimmermann (G. Henle Verlag, 1998).
[123] Ibid.
[124] Malcolm Bilson, 'Schubert's Piano Music and the Pianos of His Time', *Studia Musicologica Academiae Scientiarum Hungaricae*, 22.1/4 (1980), pp. 263–71 (pp. 265–66), doi:10.2307/901999.

colour and more. According to Bilson, the pressure needed to produce a singing tone on historical instruments were relatively small. This was because historical instruments like Schubert's piano had far less tension as they used a wooden frame, small wooden hammers that were covered with layers of soft leather, and dampers that were also covered with leather, resulting in more attack, less tone, rapid decay, and a quick release.[125] According to Gunn, modern pianists who are used to playing on a modern piano felt strange when they first played on a fortepiano. This was because octaves were easily overjumped, notes would sound before intended, trills do not respond, and the scales were falling apart.[126] When Jun-Hee D. Han performed a Beethoven piano sonata on a Broadwood, he felt challenged by the limited volume due to its light action. Moreover, it required a very sensitive playing style as differentiating *p* and *pp* required fingertip control of touch and a more sensitive listening.[127] This is because when comparing the weight between a Broadwood and a modern Steinway 'B', the difference in resistance is approximately 50g, and the difference in the return of the keys is 30g.[128] When the weight required for playing on different pianos varies significantly, a pianist's expectation, techniques, and playing style will be disrupted, ultimately affecting and the resulting outcomes.

In terms of tones produced, the piano in the late-twentieth century was constantly mentioned to be a percussive instrument, and was sometimes commented to have produced ugly, overstricken tones. The piano action in 1870 had reached something similar to that of the modern action and sound, and remained the same

[125] Bilson, 'Schubert's Piano Music and the Pianos of His Time', p. 266.
[126] Donna Louise Gunn, *Discoveries from the Fortepiano: A Manual for Beginning and Seasoned Performers* (New York: Oxford University Press, 2015), p. 87.
[127] Han, 'Performing Beethoven's Piano Sonata in C Minor, Op. 111 on the 1816 English Broadwood Pianoforte', p. 74.
[128] Ibid., p. 74.

until around 1970.[129] According to Montagu, whose material originated from lectures in the 1990s, the tone quality of the modern piano deteriorated in the past twenty years (since around the 1970s). He also further noted that the modern Steinway piano with its harder hammers also contributed to a 'hard' tone.[130] As the piano action and sound only began to resemble those of the modern piano around 1870,[131] this could potentially explain why the method book by Lebert and Stark, despite being published in 1859, still showed almost identical instructions, including the finger action used and the limited hand and body movements, while method books that were published after 1870 by pedagogues such as Deppe, Mason, Leschetizky, and Matthay exhibited differences in their techniques and approaches.

Considering their stark differences, the choice of using historical or modern instruments needs to be taken into consideration especially in researching and employing historical techniques as the instruments used may provide more insights and background to the reasoning behind the research findings. Therefore, this research not only uses the widely accessible modern piano, but it also involves the use of historical instruments to the best of my ability. Being a modern pianist, hands-on experiences on these instruments are important as they enable myself as the performer-researcher to gauge the differences between instruments with my body and my own two hands, going beyond imagining the differences through texts, and placing the historical techniques in the appropriate context, providing a more historically aligned perspective.

[129] Jeremy Montagu, *The Industrial Revolution and Music* (Hataf Segol Publications, 2018), p. 41.
[130] Ibid., p. 41.
[131] Ibid., p. 41.

With the above literature highlighting the intrinsic relationship between the historical techniques, playing styles, compositions, instrument preferences of composers, and how they influence each other, they have helped to contextualise and situate this research. This established a central position for historical techniques to be placed at the heart of this research, while tying together these interconnected topics.

Chapter 3 The Selected Nineteenth-Century Techniques

3.1 J. N. Hummel's Techniques from *A Complete Theoretical and Practical Course of Instructions on The Art of Playing Piano Forte*

A complete theoretical and practical course of instructions on the art of playing piano forte by Johann Nepomuk Hummel is one of the most comprehensive guides available, published in 1828. Hummel worked on the treatise for five years, and Jarl Hulbert speculated that he started during late 1820 or early 1821.[1] In October 1825, he wrote to Carl Friedrich Peters, the publisher, stating that he had completed his treatise.[2] Hummel prioritized and considered this work to be very important that, according to his student Ferdinant Hiller, he even let go of the opportunity of an opera commission from Paris to dedicate most of his time to the treatise.[3]

The result of Hummel's effort was his treatise consisting of three parts. The first part starts with elementary instructions, followed with usage and meanings of notations and signs such as key signatures, scales, etc. The second part of the treatise focuses on fingering including extending, crossing, changing, and more, while the last part discussed ornamentations, and a general guide on musical performance. To understand techniques and playing approaches used in the classical period, an in-

[1] Jarl Hulbert, 'The Pedagogical Legacy of Johann Nepomuk Hummel' (unpublished doctoral dissertation, University of Maryland, 2006), p. 13 <https://may.idm.oclc.org/login?url=https://www.proquest.com/dissertations-theses/pedagogical-legacy-johann-nepomuk-hummel/docview/305304763/se-2?accountid=12309> [accessed 17 December 2024].
[2] Karl Benyovszky*, J. N. Hummel: Der Mensch und Künstler* (Bratislava: Eos-Verlag, 1934), p. 300, cited in Hulbert, 'The Pedagogical Legacy of Johann Nepomuk Hummel', p. 13.
[3] Ferdinand Hiller, *Künstlerleben.* (M. Du Mont-Schauberg, 1880). pp. 6–7, cited in Hulbert, 'The Pedagogical Legacy of Johann Nepomuk Hummel', p. 16.

depth examination and discussion on elementary instructions will be the focus of this subchapter.

3.1.1 Hand and Body Posture

Playing approaches such as seating, hand, elbow, and body position, which are one of the first means of approaching the piano for all pianists, are included in the elementary instructions of the book. Hummel suggested that a pianist should sit at the middle, and about 6 to 10 inches from the keyboard so that the highest and lowest key can be reached without altering one's body position.[4] The seat must be at a height not too low nor too high to achieve a natural position where both hands can rest on the keys without effort. The body of a pianist must be held upright, without bending forward or sideways, with elbows turned towards the body, but not pressed against it.[5] The hands and fingers need to be relaxed and moved without excessive force, and the hand position should be rounded and turned outwards to ensure the thumbs can be used easily on the black keys. While the height of the hand position depends on the space needed to bend one's finger joints, a horizontal line should be achieved by the tips of the thumb and the little finger when placed on the keyboard. When playing, keys should be struck with the middle of the fingertip and played lightly with the edge of the top joint of a thumb. Moreover, every finger should be placed on a key, and thumbs should get used to the bent and inclined position towards the index finger as preparation to be passed under.[6]

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[4] Johann Nepomuk Hummel, *A Complete Theoretical and Practical Course of Instructions on the Art of Playing the Piano Forte,* 3 parts (T. Boosey, 1828), I, p. 2 <https://urresearch.rochester.edu/institutionalPublicationPublicView.action?institutionalItemId=28625> [accessed 2 March 2021].

[5] Ibid., p. 3.

[6] Hummel, *A Complete Theoretical and Practical Course of Instructions on the Art of Playing the Piano Forte,* I, p. 3.

In playing, a free and quiet position needs to be kept, and all violent movements of the elbows and hands must be avoided.[7] He further stated that the fingers should not be lifted too high and should move lightly and freely using the joints of the fingers. While Hummel did not describe exactly how one should use the finger joints, in a curved finger position on the piano, the use of finger joints, apart from that of the thumb, can only result in the fingertips sliding or shifting from the middle to the front of the key. When combining this with the support of the finger knuckle, an almost gliding or stroking motion will be produced.[8]

His playing style can also be surmised from his examples of behaviours to avoid, warning readers of what must not be followed. For example, he noted that incorrect positions such as flat fingers, and hanging of the hands downwards must be avoided as they lead to a heavy playing style.[9] He also discouraged ungraceful habits such as holding one's head too near to the book, biting the lips, distorting one's mouth, or keeping time by nodding.[10]

While there are no illustrations on the body position for Hummel's instructions, Mark Kroll believed that Hummel's 'overriding principle was to maintain a natural and completely relaxed approach'.[11] He explained Hummel's hand position, saying:

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[7] Hummel, *A Complete Theoretical and Practical Course of Instructions on the Art of Playing the Piano Forte,* I, p. 4.
[8] Also see Kobb's description in p. 193–94 and Greikenperl's words in p. 242.
[9] Hummel, *A Complete Theoretical and Practical Course of Instructions on the Art of Playing the Piano Forte,* I, p. 3.
[10] Ibid., p. 4.
[11] Mark Kroll, *Johann Nepomuk Hummel: A Musician's Life and World*, ed. By Ivan Koska, 2nd edn (Music Centre Slovakia, 2022), p. 270.

> The elbows are loosely held close to the body and are kept on the same horizontal plane as that of the wrists and hands, which are always quiet and relaxed. The fingers remain close to the surface of the keys, as if glued to them.[12]

I have attempted to sit according to Hummel's instructions, on a medium height chair and a slightly higher chair for a more comfortable arm placement (See Figure 3.1). I adjusted the chair to at least medium height, or slightly higher, to get to a position where the fingers can rest on the keys without effort (almost hanging) as I have a shorter upper body. Individuals with a longer upper body may not need to sit as high.



Figure 3.1a&b. Sitting at a medium height (left) vs. Sitting at a high seat with Hummel's hand posture (right)

As Hummel's instruction described elbows to be turned towards the body, the elbow becomes a fixed pivot point for the forearms to move horizontally along the plane of the keyboard. For the elbow to remain quiet, the bench height mentioned

[12] Ibid.

earlier played an important role. A pianist will only be able to reach the highest and lowest note with this posture from a position where the elbow is not lower than the keyboard.

When sitting at a position with my elbow lower than the keyboard, the range that can be reached was rather limited (See Figure 3.2.), in comparison to a medium or higher seating position. A slight change in the shape of the arm could be observed as the forearm could be seen slanted upwards towards the keyboard. This made it hard for me to move my hands towards the higher and lower octaves while keeping the elbow in place as the still elbow will lock the movements of the hand, and the fingers can only reach a limited number of keys from the middle range.



Figure 3.2. Using Hummel's position with a slightly low seating.

However, the low seat would not be an issue with my original arm posture. This was because, in contrast to Hummel's treatise where the elbows were turned towards the body, my elbows were not passive points, instead, they moved together

with the hand depending on its position. The elbow was extended outward to support the hand when it needed to play a higher note on the right hand or lower note on the left hand. As shown in Figure 3.3., where the elbows were extended and further from the body, the elbows were no longer lower than the keyboard when extended and will not restrain the movement of the hands towards the highest and lowest parts of the keyboard.



Figure 3.3. Original position in low seat, with extended elbows.

Furthermore, when I first started to apply the inwardly turned passive elbows to my playing, I realized that it was easy to develop stiff arms especially when playing at the middle range of the piano. This was caused by the twisted wrist and elbow which had nowhere to go, and ended up pressing against the body, which was what I should avoid according to Hummel. To overcome this problem, I adjusted my upright posture to avoid leaning forward or hunching my back, and positioned my seat slightly further from the piano to allow more space for the arms.

In terms of touch and sound, he strongly warned against the heavy playing style and emphasized producing a clear, equal, and rounded tone.[13] He wrote, 'all pressure and thumping are to be avoided; neither hands nor fingers should change their naturally bent position'.[14] He also recommended that, fingers should not be kept on the keys for too long nor for too little time, but one should get used to holding on syncopated notes while playing lightly and detached on short notes.[15] This is because holding a key longer than it is written reduces the clarity of a performance.

From the detailed elementary instructions of Hummel's treatise, it is obvious that the body posture of a pianist was carefully addressed. The posture of the body and movements of the elbows and hands need to be cautiously executed to create narrow and quiet movements. Not only was the style of playing reflected in the body movements, it was also evident in the sound produced. The tone that Hummel encouraged suggests a light and clear sound. The simple and quiet movements, acted as a strong foundation to his techniques in this treatise. The subtle hand movements and free playing style is echoed in the various situations discussed below. However, a powerful tone was also used at times to describe playing with more roundedness and finish. While the terms 'lightness' and 'powerful' seemed to contradict each other, we will begin to understand why Hummel used both these words in describing the tones he was looking for, after reading Ferdinant Hiller's comment on Hummel's playing style.

[13] Hummel, *A Complete Theoretical and Practical Course of Instructions on the Art of Playing the Piano Forte,* I, pp. 3–4.
[14] Ibid., p. 4.
[15] Ibid., p. V–3.

> The appeal, the smoothness, and suppleness of his touch — the grace and simple emotions of his singing line on his delicate instrument, and the clarity and ease of his technique were often admired, and he did not lack energy and pathos either.[16]

The comment emphasized that Hummel's techniques while could be described as light and simple, 'did not lack energy'.[17]

Hints of guidance on hand movements while playing the piano can be seen in the execution of different articulations. The treatise reinforced the use of quiet hand movements and focused more on using the fingers. Mark Kroll, when discussing Hummel's treatise, commented that Hummel essentially used and taught a finger technique.[18] Instead of using the hand or arms, fingers were used to differentiate the two contrasting articulations — *legato* and *staccato*. Hummel mentioned the way to play *legato* was to play as smoothly as possible to connect the notes in *legato* manner without lifting the hand.[19] In explaining *staccato* played on crotchets and quavers, he wrote, 'The keys are to be struck smartly by the fingers and quitted immediately, without lifting up the hand too far…'. When playing them on quicker notes such as semiquavers, he wrote:

> […] the hand must not be taken up at all; but the fingers must be hurried away from the keys, very lightly and in an inward direction. The greater the

[16] Ferdinand Hiller, *Künstlerleben* (M. Du Mont-Schauberg, 1880), p. 12, cited in Hulbert, 'The Pedagogical Legacy of Johann Nepomuk Hummel', p. 67.
[17] Ibid.
[18] Kroll, *Johann Nepomuk Hummel*, p. 270.
[19] Hummel, *A Complete Theoretical and Practical Course of Instructions on the Art of Playing the Piano Forte,* I, p. 65.

> lightness with which these detached notes are played, the more pleasing the effect which they will produce.[20]

According to these instructions by Hummel, it seemed that his *staccato* technique on quick notes can only be done with the help of finger joints, especially the middle joint of the finger, so that the inwards sweeping motion can be performed. Apart from employing the finger in his *staccato* techniques, Hummel also described that 'the quickness of motion lies only in the joints of the fingers'.[21] This technique could have been indirectly passed on to William Mason, as according to Mason, Liszt considered Hummel to be the source of his 'two finger exercise'.[22] Therefore, the use of finger joints can still be seen in Mason's treatise where he wrote that 'the finger takes the key while "on the wing", so to speak; that is, the finger strikes and sweeps the key while in the act of flexion, or in pulling toward and closing up to the hand'.[23] However, Kroll mentioned that no evidence supporting Mason's claim could be found. In this research, Hummel's use of finger joints is discussed amongst other finger techniques in Chapter 3.5.4 and are further incorporated and demonstrated in musical examples in Chapter 4.1

3.1.2 Fingers

For the fingerings that Hummel suggested, convenience is of top priority, followed by elegance.[24] As incorrect fingering or violent movements of the body would at

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[20] Hummel, *A Complete Theoretical and Practical Course of Instructions on the Art of Playing the Piano Forte,* I, p. 65.
[21] Hummel, *A Complete Theoretical and Practical Course of Instructions on the Art of Playing the Piano Forte,* I, p. 4.
[22] Mark Kroll, *Johann Nepomuk Hummel: A Musician's Life and World*, ed. By Ivan Koska, 2nd edn (Music Centre Slovakia, 2022), p. 307.
[23] William Mason, *Touch and Technic*, 4 vols (Theodore Presser Co., 1917), I, p. 9.
[24] Hummel, *A Complete Theoretical and Practical Course of Instructions on the Art of Playing the Piano Forte,* II, p. 1.

times prevent performers from playing with ease, the easiest and most convenient fingering choice should be used. On top of convenience, elegance can be achieved by avoiding all unpleasant contortions or grimaces.[25]

In the explanation on fingering, he covered a number of techniques. While these techniques provide solutions to various passages, they also influence the hand movements of the performer. For example, in passing a long finger over a shorter finger, one would naturally need to turn the hand outward and wrist inwards. Hummel further expanded on how one's hand should move or progress when playing these techniques, and in many cases, he recommended to move with only slight hand movements while executing them. He also sometimes made note of the expected sound, which can help readers and performers understand the link between each movement and how it should sound. For example, Hummel wrote in the first section that 'the keys must be struck rather forwards than backwards on the keyboard, that the tone may be more powerful, and the passages delivered with more roundness and finish.'[26] In explaining the articulation of a semi *staccato*, he wrote: 'when a curve line is drawn over the dots, which generally takes place in passages of a singing character, the notes must, as it were, be gently detached by the fingers, and each for itself, receive a certain increasing degree of emphasis.'[27]

Similar to Bach's treatise that was mentioned in 2.3.1 , Hummel too emphasized the use of thumbs, followed by other techniques used in fingering such as passing under or crossing over (known as turning of thumb in Bach's treatise),

[25] Ibid.
[26] Hummel, *A Complete Theoretical and Practical Course of Instructions on the Art of Playing the Piano Forte,* I, p. 4.
[27] Ibid., p. 66.

omission, substitution, extension, use of thumb and little finger on black keys and more. The thumb was notated as '+' and 1, 2, 3, and 4 for the index, middle, ring, and little finger respectively. The thumb was considered to be one of the most important fingers for Hummel as it acted as a pivot point for the extension or contraction of the hand. He noted that other fingers when turning over a thumb must be quick but also connected such that a gap could not be heard.[28] The importance of the thumb also influenced the hand position in Hummel's techniques. To provide an example, in the case of using the thumb on a black key, it would also lead us to the inwardly turned wrist that was advocated by Hummel.

While the musical function of the wrists was not noted in the treatise by Hummel, the recommended placement of the wrist was rather unusual compared to what I am used to. However, considering some of the fingering techniques provided by Hummel, and that the thumb was being emphasized more, this resulted in the thumb being positioned further into the keyboard. Therefore, the wrists needed to be turned inwards to ensure the employment of the thumb was easier and that the thumb and little finger were aligned in a straight line horizontally (See Figure 3.4a).

Observing the posture of my own hand, the thumb was already included in the range of the keyboard without having the wrist turned inwards in my normal position with a straight wrist (See Figure 3.4b). However, when turning the wrist inwards, the thumb was included further into the key, and closer to a black key as well, which could be useful when a black key was required on the thumb.

[28] Hummel, *A Complete Theoretical and Practical Course of Instructions on the Art of Playing the Piano Forte,* II, p.1.



Figure 3.4a & b. Left: Wrist turned inwards, Right: straight wrist.

This inward position of the wrist led to a different approach in playing the piano. The fingers become the leading part while the wrists and arms act as followers particularly in an ascending manner for the right hand and descending for the left hand. When playing in the opposite direction, the wrist could be observed moving when turning fingers over the thumb. However, this can be mitigated if one sits at a medium or higher seating position and focuses on using the fingers.

In the technique of using the thumb, where the thumb passes under other fingers or where other fingers are turned over the thumb, Hummel noted that one should always keep their thumbs slightly bent under the index finger as preparation to pass under.[29] This is because a readied and prepared motion of the thumb is needed when passing under. Although this fingering choice of passing the thumb under or other fingers turning over the thumb is widely used today, Hummel specifically made note of avoiding any motions or twisting in the arm. It is a common tendency to lift

[29] Hummel, *A Complete Theoretical and Practical Course of Instructions on the Art of Playing the Piano Forte,* II, p. 66.

the arm a little while passing the thumb under, and restricting the arm movements will lead to only moving with the fingers and stretching the thumb further. It is also the same for crossing over the thumb. Additionally, when crossing over the thumb and playing notes that are close by, all fingers must be close together and the hand steady.[30] Keeping all fingers close together would make it easier to stretch the finger that is crossing, and doing so will help keep the hand still. Turning over and passing under the thumb is also used in scales, and Hummel's fingering for each scale is organized with the same set of fingering that we use today. However, through several trials and attempts on the modern grand piano with these rules in mind, in situations where running passages go back and forth and when finger turns are involved, the posture of the inwardly turned wrist may not be the most ideal. This is because turning the finger and crossing over the thumb while keeping the wrist inwards reduces the accuracy and clarity of tones on the modern piano. The movements of the wrist and arm can now be seen as a luxury that pianists who followed Hummel's techniques did not have. With these minor constraints, I started to place myself in their shoes, slowly discovering how these hand movements worked.

Hummel suggested that after a turn, the thumb may dwell longer on the key when playing arpeggios or when playing chords in a skipping manner to create a point of support to achieve a steady hand while, at the same time, creating a richer tone.[31] This is in contrast to his initial note in Part I where he mentioned about not dwelling on a note longer than necessary,[32] as well as what we use today especially

[30] Hummel, *A Complete Theoretical and Practical Course of Instructions on the Art of Playing the Piano Forte,* II, p. 89.
[31] Hummel, *A Complete Theoretical and Practical Course of Instructions on the Art of Playing the Piano Forte,* II, p. 67.
[32] Hummel, *A Complete Theoretical and Practical Course of Instructions on the Art of Playing the Piano Forte,* I, p. 34.

on pieces from the Classical period where lightness and the value of notes are important. While holding the thumb down could produce a richer sound, the brisk and crisp tone would be diminished, assuming that one was not using the pedal. However, if a richer sound is needed in a specific section of the music when using an instrument without sustaining pedals such as a clavichord, it would require the help of the thumb to sustain the bass note for a fuller sound of the harmony. Considering the turned wrist position, it might help with the connection of tones as well. In my preliminary attempts of Hummel's techniques on the modern piano, holding the first note of the arpeggio would help provide support, but it would also change the hand position of an inwardly turned wrist as it would be difficult to reach the fourth and little finger with the first note held down while keeping the wrist turned to the other side. However, doing this on smaller keyboard instrument such as a clavichord is not impossible. Not only that, holding the first note down also helped me maintain a stable hand position, allowing other fingers to prepare by resting on their respective notes.

While the use of the thumb was taught in the treatise, we should be careful not to use it too frequently or too quickly to avoid injury.[33] To avoid this, a few techniques such as the use of the same fingering for a progression of similar groups of notes, the omission of one or more fingers, or the technique of passing a long finger over a short finger, were used to reduce the use of the thumb passing under or fingers crossing over the thumb.

[33] Hummel, *A Complete Theoretical and Practical Course of Instructions on the Art of Playing the Piano Forte,* II, p. 3.

When playing a progression of similar groups of notes with the same fingering, Hummel noted the steadiness of the hand and fingers that are only scarcely lifted that glides from one key to the next.[34] On top of a steady hand, all notes needed to be equally and closely connected to each other, even when there are extensions.[35] Hummels' instructions for the hand to stay still with the fingers barely lifted, led to the use of very subtle movements.

Only lifting the finger slightly while keeping the hand at rest and gliding from one key to the next are needed to achieve this technique. For a better connection, the first note or last note of each group can be held down longer than the written value when it has a leading melody. See Figure 3.5. and Figure 3.6..



Figure 3.5. first note of each group moving descending: C–B–A–G–F–E–D–C.
From A Complete Theoretical and Practical Course of Instructions on the Art of Playing the Piano Forte by Hummel, II (T. Boosey Co.,1828, p. 8).



Figure 3.6. first note of each group moving ascending: G–A–Bb–C–D–E–F.
From A Complete Theoretical and Practical Course of Instructions on the Art of Playing the Piano Forte by Hummel, II (T. Boosey Co.,1828, p. 14).

[34] Hummel, *A Complete Theoretical and Practical Course of Instructions on the Art of Playing the Piano Forte,* II, p. 3.
[35] Ibid., p. 4.

The omission of one or more fingers, the use of thumbs and little fingers on black keys, and the passing of a long finger over a short finger, are three more techniques that are used to reduce the crossing over the thumb or the thumb passing under. Omitting one or more fingers is a simple technique that would lead to a quieter and less fatigued hand that is capable of playing with more certainty. For example, the index finger was omitted in Figure 3.7..



Figure 3.7. Exercise with index finger omitted.
From A Complete Theoretical and Practical Course of Instructions on the Art of Playing the Piano Forte by Hummel, II (T. Boosey Co.,1828, p. 153)

In order to use this technique, one has to make sure that the fingers are drawn closely together and that the fingers are prepared even before playing the key.[36] Using the thumb or the little finger on black keys was made necessary as compositions expanded. Doing this not only reduces the use of the thumb passing under or the fingers crossing over, it also produces a more conducive and connected performance.[37] On the other hand, the technique of passing a long finger over a short finger, such as passing the middle finger over the ring finger, needs to be used carefully and in the correct situation.[38]

[36] Hummel, *A Complete Theoretical and Practical Course of Instructions on the Art of Playing the Piano Forte,* II, p. 152.
[37] Ibid., p. 224.
[38] Ibid., p. 237.

These techniques, which avoid large movements of the hand or finger, were taught as multiple solutions to replace the crossing of the thumb that would otherwise involve a bigger motion. It can be seen that Hummel was doing his best to avoid large movements in the hand and arms, and wanted more convenience for pianists where the actions are easy and without effort. Furthermore, Hummel's hand position where the hand is turned outwards also matches some of the techniques explained above, for example, the technique of passing long finger over short finger. The outwardly placed hand supports the motion of this technique, making the passing of long finger easier and more natural.

When playing notes that are further apart where an extension is needed, the hand must be in a flatter position with the fingers wider apart. However, one must return to the normal position once the intervals become smaller. As different fingers have different strengths and anatomy, he mentioned that the largest interval between the middle and ring finger or between the ring finger and little finger is a third, as the stretch between them is more confined, while the extension between the thumb and index finger are capable of an octave.[39] Unsurprisingly, when discussing hand stretches, he again reinforced the importance of keeping the arm still without moving too much and hands steady without lifting too far, as it would otherwise cause the notes to be cut short or held for too long.[40] It appears as if Hummel was worried that large movements might produce unevenness in the notes, therefore minimizing movements would prevent the weight of the arm from pushing or pulling the notes in

[39] Hummel, *A Complete Theoretical and Practical Course of Instructions on the Art of Playing the Piano Forte,* II, pp. 209–10.
[40] Hummel, *A Complete Theoretical and Practical Course of Instructions on the Art of Playing the Piano Forte,* II, p. 212.

directions that would cause them to be unequal. However, he indicated that holding the thumb for longer is also allowed in extensions to secure the position of the hand.

Although Hummel separated elementary directions and fingerings into two sections, a few connections can be made between the discussed body posture and the fingering techniques. The intention for the wrist position that needs to be turned inwards and the elbow position that needs to be placed near the body becomes clearer when executing some of the mentioned techniques. It can also be seen that the body posture that he suggested supports the utilization of some of the techniques mentioned. The position of the hand turning outwards not only makes it easier for pianists to employ the thumb on the black keys, it also supports techniques such as gliding of the hands without lifting them, and the passing over of the long finger over the shorter finger.

3.1.3 Quiet Body Movements

In terms of a performance, Hummel thought that its beauty cannot be perfectly taught.[41] But in order to achieve a musical performance that is correct and beautiful, pianists need to master their fingers to be able to produce a variety of touch.[42] On top of that, a performer should play with an easy hand position, a gentle touch, but a firm stroke, while not distorting his or her body or elevating arms unnaturally.[43] He also noted that performers should avoid compensating the absence of inward feelings by

[41] Hummel, *A Complete Theoretical and Practical Course of Instructions on the Art of Playing the Piano Forte,* III, p. 39.
[42] Ibid., p. 40.
[43] Ibid., p. 41.

using distortions of the body, unnatural elevation of the arms, excessive use of pedal or rubato, or too much decorations in the melody.[44]

His pertinence in having quiet body movements was not only seen through the treatise, but it was also passed down to his student, Sigismund Thalberg. While having taken lessons from others, his primary teacher was Hummel, and it was Hummel who shaped his piano techniques.[45] As he toured around Europe, Moscow and even the United States to give recitals, the English critic James Huneker compared his playing with that of Liszt, and said that:

> Liszt's attitude at the piano, like that of a pythoness, has been remarked again and again. Constantly tossing back his long hair, his lips quivering, his nostrils palpitating, he swept the auditorium with the glance of a smiling master […] There was nothing of the kind about Thalberg. He was the gentleman artist, a perfect union of talent and propriety. He seemed to have taken it for his rule to be the exact opposite of his rival. He entered noiselessly; I might almost say without disturbing the air. After a dignified greeting that seemed a trifle cold in manner, he seated himself at the piano as though upon an ordinary chair. The piece began, not a gesture, not a change of countenance! Not a glance toward the audience! If the applause was enthusiastic, a respectful inclination of the head was his only response. His

[44] Ibid., p. 40.
[45] Ian Glenn Hominick, 'Sigismund Thalberg (1812–1871), Forgotten Piano Virtuoso: His Career and Musical Contributions' (unpublished doctoral dissertation, The Ohio State University, 1991), p. 6 <https://www.proquest.com/docview/303945183/abstract/1D002F7380664358PQ/1> [accessed 7 February 2022].

> emotion […] betrayed itself only by a violent rush of blood to the head, colouring his ears, his face and his neck […][46]

According to Hitchcock, Thalberg sat 'rigidly upright and intentionally utilized a minimum of extraneous physical motion in his performances'.[47] Furthermore, it was also mentioned in the preface of Thalberg's studies, *The Art of Singing on the Pianoforte, Op. 70*, that minimum gesture should be used within the arm, and he confined his techniques to mainly lower arm muscles, finger, hand and wrist.[48] The iconography of Thalberg playing the piano[49] also showed the similarities in terms of body postures described in Hummel's treatise, especially in the placement of the elbows. These sources all showed that Thalberg inherited the techniques and approaches of Hummel.

In conclusion, Hummel's treatise encouraged pianists to play with very limited hand and arm movements, with all excessive and extra movements removed. Another unique characteristic of his playing approach was to keep the elbow towards the body and hands turned outwards as if the music passages are led with the fingers, especially in playing ascending on the right hand and descending on the left. The use of finger joints instead of using the arms also results in a light touch and tone. We

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[46] James Huneker, *Franz Liszt* (Charles Scribner's Sons, 1911), p. 285, cited in Hominick, 'Sigismund Thalberg (1812–1871), Forgotten Piano Virtuoso', p. 45.
[47] Daniel L. Hitchcock, program notes to *Operatic Piano*, cited in E. Keith Chambers, 'Sigismund Thalberg: The Three-Hand Method and Piano Techniques of His Operatic Paraphrases' (unpublished doctoral dissertation, University of Houston, 2004), p. 5 <https://www.proquest.com/docview/305195887/abstract/CC044BBA5ED94FF0PQ/1> [accessed 7 February 2022].
[48] Hominick, 'Sigismund Thalberg (1812–1871), Forgotten Piano Virtuoso', p. 49.
[49] E. Douglas Bomberger, 'The Thalberg Effect: Playing the Violin on the Piano', *The Musical Quarterly*, 75.2 (1991), pp. 198–208 (p. 199), doi:10.1093/mq/75.2.198.

also see that in using Hummel's techniques, the hand movements should be as quiet as possible, placing more emphasis on fingers than on the wrists or arms.

All these were easier discussed than practically employed especially from the perspectives of the long-instilled techniques of a modern pianist. To a modern pianist like myself, these techniques change the path of motion and the flow of energy in playing. Hummel's techniques brought about a much lighter approach and a very different flow of energy in the arms when playing. His position of the wrist prompted more horizontal and flat movements when moving on the keyboard, without any rotational movements of the wrist or arms[50] that I commonly use. When using my own technique, I typically experience the flow of energy from the shoulder and back, travelling through the relaxed, unhindered arm and hand before reaching the fingers and their tips, which maintain some firmness to deliver the ideal tones. In contrast, when applying Hummel's approach, the arms and elbows not only remain passive, the transmission of energy was also not felt through them. Instead, the kinetic chain becomes much shorter and confined; effort can be felt from the finger knuckles and extend through the finger joints to the fingertips, with the wrist functioning as a stabilising and supporting part of the hand. In general, Hummel's hand and body positions felt more reserved and will produce rather small-scale actions on the piano, however it should be noted that these movements match the fingering choices of Hummel.

[50] Seymour Fink, *Mastering Piano Technique: A Guide for Students, Teachers, and Performers* (Amadeus Press, 1992; facsimile repr. 2003), p. 78–79.

3.2 Carl Czerny's Techniques from the *Complete Theoretical and Practical Piano Forte School, Op. 500*.

Carl Czerny had a different set of techniques compared to Hummel. As a pedagogue, Czerny was claimed to have had a rigorous teaching schedule where he taught twelve lessons a day from 8am to 8pm by 1815.[51] Around the same time, Beethoven also entrusted Czerny to teaching Karl, his nephew, the piano.[52] His success as a pedagogue is still recognized today where his extensive range of studies and etudes are still widely known and in use. Among his major works on piano techniques was *The Complete Theoretical and Practical Piano Forte School Op. 500*, published in 1839, about a decade after Hummel's treatise, and the fourth volume was later added in 1846.[53] The multi-volume treatise included directions from one's position of the body and hand, all the way to touch and tone in piano playing, along with a large number of studies. While there are similarities and differences with Hummel's treatise, some aspects were more aligned with my own techniques upon initial impression. For example, there were fewer limitations on the elbow positions and an approach to the finger technique that was sometimes included in modern contemporary techniques (further discussed at the end of Chapter 6.2).

[51] Alice M. Hanson 'Czerny's Vienna' in Beyond The Art of Finger Dexterity: Reassessing Carl Czerny, ed. by David Gramit (University of Rochester Press, 2008), p. 26.
[52] Ibid.
[53] Athina Fythika, 'A Historical Overview Of The Philosophy Behind Keyboard Fingering Instruction From The Sixteenth Century To The Present' (unpublished doctoral dissertation, Florida State University, 2004), p. 46 <https://repository.lib.fsu.edu/islandora/object/fsu:182500> [accessed 17 December 2024].

3.2.1 Hand and Body Posture

Similar to Hummel, Czerny was against all unnecessary movements and useless gestures,[54] and he expressed their disadvantages from the start. For seating instructions, he mentioned that the seat must be placed exactly at the middle of the keyboard, which was the same as Hummel, but he specified that it must be at a distance that the elbows can hang down freely about four inches nearer to the keys than the shoulders, to ensure that the whole keyboard range is reachable and is not obstructed by the chest.[55] The seating height was required to be proportional with the stature of the player where the end of elbows is about an inch higher than the upper surface of keys as a low seat fatigues the hands.

As for the head and chest, Czerny recommended an 'upright, dignified and natural' posture with the back inclined towards the keyboard so that the back of the seat does not touch the body.[56] He also further explained that the arms should hang down freely by their natural weight, not pressed against the body or extended outwards. One can also check for a straight horizontal line from the elbow to the knuckles of the bent fingers to make sure they are in the correct position.[57] Additionally, the wrist must not be bent down or upwards, nor should the hands be slanted to either side. Furthermore, the fingers must be curved, so that a straight line could be formed from thumb to little finger, with knuckles in a semicircle posture. In terms of finger movements, one needs to keep their fingers far apart at rest and move them up and down to strike the keys with the tip of the fingers when playing, without

[54] Carl Czerny, *Complete Theoretical and Practical Pianoforte School, Op500*, trans. by J. A Hamilton, 3 vols (London: R. Cocks, 1839), I, p. 1.
[55] Czerny, *Complete Theoretical and Practical Pianoforte School, Op500*, I, p. 1.
[56] Czerny, *Complete Theoretical and Practical Pianoforte School, Op500*, I, p. 1.
[57] Ibid., p. 2.

too much curve such that the nails hit the keys.[58] He also advised pianists to keep fingernails short to avoid them clicking on the keyboard.[59] Czerny also noted that one should not play near the edge or in the narrow part between black keys.[60] In terms of movements, while restless hand movements and oblique hand positions were not encouraged, gentle sideways movement when playing highest and lowest octaves were allowed.[61]

As Czerny asked for a horizontal straight line from elbow to finger knuckles (see Figure 3.8.), all other hand positions that were not sturdy, such as the bent upwards or downwards wrist and slanted hand positions need to be avoided (see Figure 3.9., Figure 3.10., Figure 3.11., Figure 3.12.), even though some of these postures were employed by pedagogues later in the nineteenth and twentieth centuries. For example, Leschetizky's hand posture involved a lower wrist position,[62] although not as low as Figure 3.9. A low wrist position is also a part of Seymour Fink's Upper Arm Gravity Drops technique.[63] Similarly, the slanted hand position is used when executing the wrist rotation technique in Gyorgy Sandor's book.[64] The posture by Czerny provided a playing method that was different from the passive elbow. It offers pianists a more solid hand position that supports all the fingers and made sure that the exertion of energy is easier as the straight arm allowed a more natural flow of energy. Lastly, this hand posture brings us to the issue of different playing styles between Czerny and Hummel.

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[58] Ibid., p. 2.
[59] Czerny, *Complete Theoretical and Practical Pianoforte School, Op500*, I, p. 2.
[60] Ibid., p. 7.
[61] Ibid., p. 2.
[62] Malwine Brée, *The Groundwork of the Leschetizky Method*, trans. by TH. Baker (New York: G. Schirmer, Inc, 1902), p. 3.
[63] Fink, *Mastering Piano Technique,* p. 87.
[64] Gyorgy Sandor, *On Playing Piano: Motion, Sound and Expression* (Schirmer Books, 1981), p. 81–87.



Figure 3.8. Elbow, wrist and knuckles form a straight line.



Figure 3.9. Faulty position: Wrist lowered.

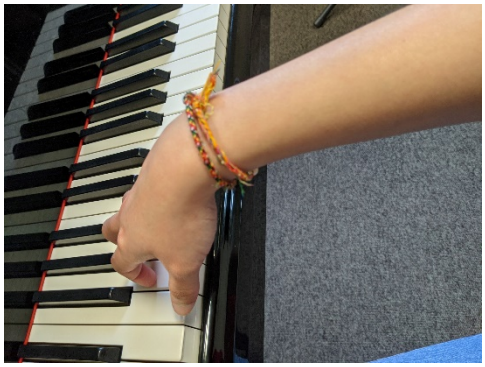


Figure 3.10. Faulty position: Wrist arched upwards.

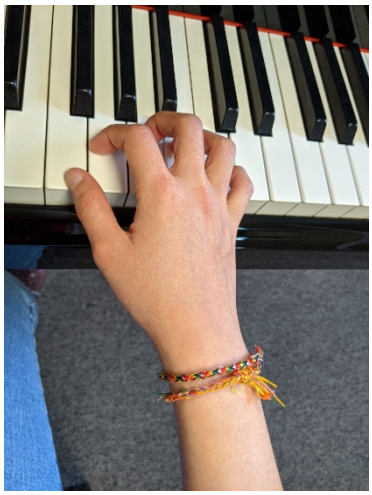


Figure 3.11. Faulty position: hand slanted outwards.

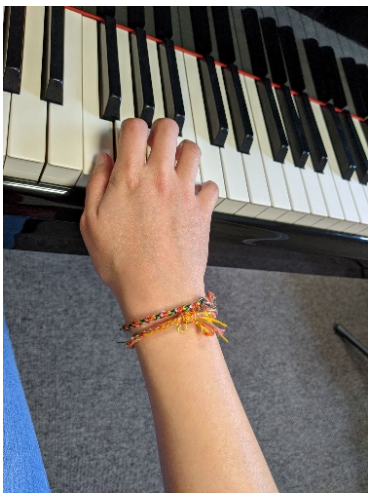


Figure 3.12. Faulty position: hand slanted inwards.

Although the perpendicular striking motion of Czerny's was already more powerful than Hummel's finger technique, it was still different from my technique, and felt slightly insufficient without the help of other hand parts when performed on the modern grand piano. Executing long passages of alternating notes using Czerny's perpendicular striking motion with a still arm was physically exhausting. It could be done for a short period of time, but the arms will grow stiff when performing it continuously; it is easier to play continuous alternating notes with the help of the wrist and arms, where a more powerful and larger joint is used. Furthermore, the

turning action of the wrist can ease the burden of the fingers and therefore make playing them much easier on the modern grand piano.

Czerny's direction in seating posture together with hand and finger posture provided readers with explicit instructions and allowed a clear picture of the correct seating and playing position. Some new elements such as placing the elbows forward, his position of the straight arm, and the movement of the fingers were a few aspects that differed from Hummel's treatise. This contrast in playing approaches also directly influenced their respective playing styles.

3.2.2 Firm Touch and Tone

Firm touch and equal tone were aspects that Czerny cared for in piano playing. One of the principal rules of Czerny was that when one finger has struck the key, the previous finger must be lifted. This was so that the weight of the hand lands and focuses on the one finger that was played.[65] This naturally led to a firm touch and tone. To emphasize this, he recommended striking a key several times with the same finger using a calm hand to press down firmly on the tone. He also advised beginners to go for a moderately strong touch.[66] However, the concept of placing weight onto a key was absent in the older treatises. In fact, Hummel and Bach were against heavy playing. While Czerny mentioned weight, he confined the movements to the fingers without the help of arms or elbows. Czerny noted that even when playing in the strongest manner, the hands should be held as calm as possible.[67] Rather than a distinguishable motion of the hands or lifting the finger higher than usual, a

[65] Czerny, *Complete Theoretical and Practical Pianoforte School, Op500*, I, p. 7.
[66] Ibid., p. 7.
[67] Carl Czerny, *Complete Theoretical and Practical Pianoforte School, Op500*, III, p. 4.

crescendo is produced by 'an increased internal action of nerves, and by a greater degree of weight, […] without however fettering the flexibility of the fingers.'[68]

Moreover, Czerny showed the importance of equality between the two hands. He mentioned that the equality in touch can be achieved when hands are kept perfectly still, and all fingers are held at the same height. This was because when a finger is held higher, the further distance would consequently result in a delayed strike, causing inequality.[69] The togetherness of the sounding tones made sure that the sound produced by two or more keys would merge rather than hearing two or three separate sounds. While this was not mentioned in previous treatises, it is also one of the aspects taught in piano lessons today to avoid messiness in playing.

Czerny introduced five different degrees of articulation, namely *legatissimo*, *legato*, *mezzo staccato*, *staccato*, and *marcatissimo*.[70] *Legatissimo* is a touch where fingers need to be held down for a longer time than written.[71] In explaining the *legatissimo* touch used in an example, Czerny wrote: 'Both hands must always be held firm, and with all their weight resting on the keys' and that 'the fingers […] must keep the keys firmly down, as low as they will descend'.[72] He also explained that the *staccato* touch would consist of 'a short firm percussion of the keys by the fingers, without lifting up the hands in any considerable degree, and without making use of that quick withdrawing or sudden dragging away of the tips of the fingers […]',[73] which emphasized a different way of playing detached touches from

[68] Czerny, *Complete Theoretical and Practical Pianoforte School, Op500*, III, p. 15.
[69] Czerny, *Complete Theoretical and Practical Pianoforte School, Op500*, I, p. 9.
[70] Czerny, *Complete Theoretical and Practical Pianoforte School, Op500*, III, p. 19.
[71] Ibid.
[72] Ibid., p. 21.
[73] Ibid., p. 27.

Hummel. Even in Czerny's various touches, the underlying characteristics of a firm touch can still be observed.

3.2.3 The Tranquil Arm

In the fingering section, similar to Hummel's emphasis on the importance of the thumb, Czerny also mentioned passing the thumb under or crossing other fingers over the thumb. In terms of the movements for this technique, Czerny mentioned that one needs to keep all remaining fingers still, and that the hand must also be still without being slanted and without making any jerking or upward movements.[74] He also highlighted the connection between notes. For example, when passing a finger over the thumb, the thumb must only release the key after the crossing finger has struck the new key to avoid a gap in the sound.[75] This is also similar to what Hummel stressed — the importance of connectivity between notes.

In playing arpeggios, Czerny advised that one should not lift up or turn one's elbow or arm, or bend their thumbs outwards, but should glide from one key to the next, not more than a quarter inch above the white keys.[76] Czerny's method requires great flexibility of the fingers as the hand and arms are to be kept still. In one example in Czerny's treatise (see Figure 3.13), he noted that in the descending passage, the thumb needed to be held down until the little finger had struck the next key.[77] This would help connect from the note played by the thumb to the note played by the little finger, which, in this case, is the last note and the first note of every group of broken arpeggio quavers. It can also ensure that the whole passage is more

[74] Czerny, *Complete Theoretical and Practical Pianoforte School, Op500*, I, p. 44.
[75] Ibid., p. 45.
[76] Czerny, *Complete Theoretical and Practical Pianoforte School, Op500*, I, p. 47.
[77] Ibid.

connected. With the arm kept still, the required movement naturally narrowed down to the fingers.



Figure 3.13. Descending passage excerpt.
From *Complete Theoretical and Practical Pianoforte School, Op500* by Czerny, (London: R. Cocks, 1839, I, p. 47).

Furthermore, the movement of the hand from one point to the next, was also discussed in Czerny's treatise, and it was in support of his rule of avoiding unnecessary and useless gestures. For example, Czerny advised that when a thumb is moving from one Bb to the next Bb, one must move over the black key surface, as moving the hand inwards was harmful.[78] Similarly, he mentioned that when moving a thumb from a C to the next C, one must move across the white surface, at a height of about a quarter inch above the keys so that they retain the same position.[79] Through this, we can assume that the hand movements described were mostly horizontal.

While Czerny called for a tranquil hand and limited movements in the above situations, he also showed flexibility in the hand movements and made exceptions in certain situations. In a situation where one needed to play throughout the keyboard, Czerny said: 'the upper part of body must naturally at times incline sideways, as

[78] Czerny, *Complete Theoretical and Practical Pianoforte School, Op500*, I, p. 52.
[79] Ibid.

otherwise the arms by being held obliquely would be an impediment to the perpendicular striking of the fingers on the keys'.[80] Czerny used the body to compensate for the extra reach required to strike the fingers perpendicularly at the further registers. However, he also commented that this should be done in a graceful and quiet manner and that the fingers should not play the keys in a slanted position. In fact, the perpendicular finger movement is one of the most important techniques for pressing down a key. In Czerny's *Letters to a Young Lady on The Art of Playing the Pianoforte*, he explained that 'the strings will only sound well when we […] [s]trike each key perpendicularly; that is, straight downwards, and exactly in the middle, and therefore not sideways nor obliquely.'[81]

He noted that when turning from a black key, one's hand must be held high over the keys to be able to pass the thumb under or to cross the other fingers over.[82] When playing wide skips, one needs to take into consideration the arm rather than just the finger as the arm is required to achieve an accurate wide skip.[83] He further stated that one should keep the arm light and try to maintain striking the keys in the perpendicular direction despite the large leap.[84] In order for one to play a key in the perpendicular direction, one must hold their arm at the most natural position, without extension,[85] and the same applies for playing octave skips.

[80] Czerny, *Complete Theoretical and Practical Pianoforte School, Op500*, I, p. 54.
[81] Carl Czerny, *Letters to a Young Lady, on the Art of Playing the Pianoforte, From the Earliest Rudiments to the Highest State of Cultivation: Written as an Appendix to Every School for That Instrument*, trans. by J.A. Hamilton (R. Cockes & Company, 1848), pp. 11–12.
[82] Carl Czerny, *Complete Theoretical and Practical Pianoforte School, Op500*, II, p. 66.
[83] Ibid., p. 161.
[84] Ibid.
[85] Ibid.

The tranquil arm was also exempted in places where music needed to be played in a *marcato* manner. As they should be played as short as possible, Czerny noted that one needed more than the usual elevation of the arms to achieve this, especially in skips.[86] Czerny also gave examples of playing with *staccato* that would make the music more effective but also more difficult. One would need to play them with great force using rigidly bent fingers together with movements of the arm to produce an extremely short sound which gives excitement and an unusual degree of spirit to the music.[87] This technique, however, should only be used in *forte* parts, while soft *staccato* passages must be played only using the fingers with a tranquil arm. While he introduced techniques that involve some movements of the arm, he reminded readers that it should be done in moderation, and that the forearm was only allowed so much movement that the player is able to achieve the desired effect and no more.[88] He included a more thorough explanation regarding the movements that were necessary, and stated:

> Some graceful movements are necessary while playing; it is only the excess that must be avoided. When we have to play in the highest or lowest octave, a gentle inclination of the body is at once necessary and appropriate. When we have to play difficult passages, chords struck loud and short, or skips, the hands are and must be allowed a moderate degree of movement. As we must sometimes look at the notes, and sometimes at the hands, a slight movement of the head is if not necessary, at least very excusable.[89]

[86] Czerny, *Complete Theoretical and Practical Pianoforte School, Op500*, III, p. 28.
[87] Ibid., p. 29.
[88] Czerny, *Complete Theoretical and Practical Pianoforte School, Op500*, III, p. 30.
[89] Czerny, *Letters to a Young Lady*, p. 31.

However, he warns against ‘unnecessary and ridiculous’ movements, and gave examples of what he meant by them. He wrote:

> […] even very good pianists, are guilty of these and similar contortions and grimaces, against which I must warn you.
>
> Many, too, have the detestable habit, when they wish to strike a note with peculiar emphasis, of elevating their knuckles so much that the hand seems to form waves, like troubled waters.
>
> Others endeavour to manifest their feelings by widely jerking out their elbows; or they mark the commencement of every bar by making a low bow with their head and chest, as if they were desirous of shewing reverence to their own playing. Others, after every short note, suddenly take up their hands as far from the keys as if they had touched a red-hot iron.[90]

Based on Czerny’s instructions, it can be seen that he agreed with Hummel and Bach’s notion of not including any excessive gestures and emphasized the tranquil arm. Nonetheless, his means of achieving the tranquil arm was slightly different from Hummel’s. Czerny’s treatise consisted of some elements that were carried forward from the older playing styles, while at the same time showed a more modern attempt at piano playing, of which some aspects can still be seen today.

[90] Czerny, *Letters to a Young Lady*, p. 30.

The differences we see are not just the evolution of techniques between the publishing of Hummel's and Czerny's treatise, but also a product of a different lineage and playing styles. Czerny's style of playing, techniques, and instructions, especially the use of perpendicular finger movements and still arms encouraged much use of the fingers that are more powerful than Hummel's, making it easier to employ on modern grand piano.

3.3 Theodore Leschetizky's Techniques through Technique Books Published by His Students

The Groundwork of the Leschetizky Method published in 1902 was written by Malwine Brée, Theodore Leschetizky's student and teaching assistant of more than 10 years. While the book was also authorized by Leschetizky as the sole publication explaining his method and with illustrative cuts of Leschetizky's hands, Marie Prentner also published *Leschetizky's Fundamental Principles of Piano Techniques* in 1903 with a copy of testimonial from Leschetizky, stating that Prentner was his pupil of a considerable time, and is one of his very best assistants. However, Prentner mentioned that her technique was first introduced to her by her mother and later from Leschetizky.[91] According to Ethel Newcomb, one of Leschetizky's students, she recounted her conversation with Leschetizky about Brée's book:

> Frau Brée is writing a book — a book about my (long pause) — about my method. One has to call it something, if one must write a book at all about the way to study. It is the most difficult thing to write about; and most books are worse than useless. But hers will be good — as good as a book can be […][92]

Therefore, while Prentner's book on Leschetizky's techniques was considered, more emphasis was placed on Brée's book. While some thought that Leschetizky's method was founded by him, he instead claimed that he taught exactly as Czerny taught

[91] Marie Prentner, *Leschetizky's Fundamental Principles of Piano Techniques* (Dover Publications, 2005).
[92] Ethel Newcomb, *Leschetizky as I Knew Him* (D. Appleton and company, 1921), pp. 54–55.

him.[93] As this lineage of techniques is well documented, it made it possible for us to identify traces of continuity or evolution in technical development.

According to Woodhouse, where technical difficulty occurred, Leschetizky taught by demonstrating it to the student. He would repeat the section several times where students would learn by mimicking his 'elusive movements'. He also would approach technical problems by requesting students to listen to their own playing, which Woodhouse accompanied with an example of a scenario that happened during his lesson.[94] Woodhouse claimed that Leschetizky rarely referred to any technical drills, and only demonstrated them when his students lacked a certain skill.[95] As Leschetizky mainly dealt with advanced students, his *vorbereiters* (preparatory teachers) were responsible for teaching mechanical principles to newly accepted students.[96] Therefore, Brée's book discusses techniques in much detail. Leschetizky's method was also reflected in the detailed explanation of movements described in Brée's book.

Although Leschetizky gave similar advice as Hummel and Czerny in playing gracefully and avoiding violent movements, the ideal magnitude of movements in piano playing might differ between them. As the techniques evolved along with instruments and composition, the aesthetics and the acceptance level for body

[93] George Woodhouse, 'How Leschetizky Taught', *Music & Letters*, 35.3 (1954), pp. 220–26 (p. 220), doi:10.1093/ml/XXXV.3.220.
[94] Woodhouse, 'How Leschetizky Taught', p. 223.
[95] Ibid., p. 223.
[96] Anita Lee-Ling Chang, 'The Russian School of Advanced Piano Technique: Its History and Development from the 19th to 20th Century' (unpublished doctoral dissertation, The University of Texas at Austin, 1994), p. 5 <https://www.proquest.com/docview/304139077/abstract/7B8346849B7948F8PQ/1> [accessed 16 August 2021]. While Chang used the term 'preparatory teacher', Ethel Newcomb used the term 'preparatory teacher' and 'assistant' interchangeably in her book *Leschetizky as I knew him*.

movements may have changed as well. As we can see, Leschetizky's techniques involve the use of the wrist (further discussed in 3.3.2), differing from Czerny's emphasis on the tranquil hand as mentioned in the previous subchapter.

One of the main aspects discussed in the book is the movements of the pianist, along with the visual element of piano playing. Brée supported the visual of a graceful and pleasing pianist, but in moderation, similar to that of Czerny. She also showed similar ideas on minimizing excessive movements, saying that 'posing' such as 'leaning backwards with negative movements of head and eyes rolled heavenward' or 'branding one's head where it almost touches the keys' are not approved as they give a comical impression.[97] On the other hand, only focusing on sound with no graceful attitude when playing isn't encouraged as well, as Brée said: 'The listener's ear should first be seduced through the eye, and thus be rendered more impressionable'.[98] This is similar to Ethel Newcomb's (a student of Leschetizky) remarks. She wrote:

> Leschetizky liked good manners at the piano, and a poor deportment made him either sarcastic or inclined to ridicule. One girl held her head too far over the piano. Leschetizky came up behind her at the end of every phrase or two and tilted her chin higher in the air.[99]

[97] Brée, *The Groundwork of the Leschetizky Method*, p. 1.
[98] Brée, *The Groundwork of the Leschetizky Method*, p. 1.
[99] Newcomb, *Leschetizky as I Knew Him,* p. 32.

She also described a situation when Leschetizky was trying to explain to his student how to play on the piano, he calls on his butler for a demonstration of a good tone. Newcomb recounted the situation:

> The butler, who knew not one note of music, took the chord under his shaped hand, throwing his arm around with a graceful, sweeping motion to the other chord that he had religiously kept his eyes upon, and waited, without playing further.
>
> 'Is that difficult?' asked Leschetizky.
>
> 'No, sir,' said the butler.
>
> 'Well, you see', continued Leschetizky, 'you have grace of motion. Not everyone can do that as well as you did. Thank you. I will now go on with the lesson.'
>
> 'You cannot do that to save your life!' he said, turning to the pupil. 'That was a far better tone than any of yours. And why?' he said. 'Because his motions are graceful and smooth and easy.'[100]

It could be seen from the above examples that although Leschetizky was against awkward postures, he embraced certain graceful movements, and even believed that they are fundamental to the tone produced.

[100] Newcomb, *Leschetizky as I Knew Him,* pp. 235–36.

3.3.1 Hand Posture

The hand is expected to be held rounded upward, with curved fingers so that the tip-joints would fall vertically on the keys, but with an exception for the thumb.[101] Brée also noted that one's nails are expected to be kept short to allow a mellower tone produced by the pad of the fingertip.[102] The hand posture plays an important part in Leschetizky's technique as Brée did not only note them as a starting point for students, she also provided exercises and accompanying illustrations to ensure the use of correct hand posture.[103]

The hand posture differs slightly from Czerny's instruction in terms of the line formed by the fingers, and the placement and the use of the wrist. According to the illustration of Lechetizky's hand in Brée's book, the wrist is placed lower than the knuckles, which was different from Czerny's recommended posture. As for the fingers, instead of forming the fingers into a straight line, Brée mentioned that:

> The fingers being unequal in length, their vertical tips cannot, of course, stand in a straight line side by side, but form a line curving outward from the thumb to the 3rd finger, and then inward to the 5th finger.[104]

However, Prentner's presentation of hand posture was slightly different. While she also kept her wrist low at the height of the elbow, her fingers were placed perpendicularly at the edges of the keys, therefore, forming a rather straight line,

[101] Brée, *The Groundwork of the Leschetizky Method*, p. 3.
[102] Ibid., p. 2.
[103] Ibid., pp. 4–25.
[104] Brée, *The Groundwork of the Leschetizky Method*, p. 3.

parallel to the keyboard,[105] which was closer to Czerny's hand and finger position. Despite the direct lineage from Czerny to Leschetizky, their hand positions were a little different. This, however, could also be a consequence of the development of the piano as it was shown that the mean key length of both Viennese and English piano used to be shorter from 1790 to 1820, and length can be seen to have increased from 1821 to 1850.[106] The increase in length may mean that it would give performers more space for the fingers to be placed as described by Brée, without obstructed by the black keys.

Brée stated that one should always strike with the fingertip to ensure a full, strong tone.[107] As a consequence of the different strength of each finger, the thumb should be raised just enough for the keys to reach the normal level, the thumb must still be touching the key when lifting the finger, the 4th and 5th finger must be raised as high as possible, and the 2nd and 3rd finger must be raised about one third of an inch above the key.[108] When raising fingers, the original curved form must be maintained and not bent inwards or stretched outwards to avoid wasting strength.[109]

Changes in the use of fingers could be seen in the above example where Czerny's finger movements were built upon, with the addition of Brée's instruction of lifting different fingers to different heights to compensate for the different finger strengths. Furthermore, Brée also showed that finger motions are not just simple up-

[105] Prentner, *Leschetizky's Fundamental Principles of Piano Techniques*, p. 8.
[106] Kenneth Mobbs, 'A Performer's Comparative Study of Touchweight, Key–Dip, Keyboard Design and Repetition in Early Grand Pianos, c. 1770 to 1850', *The Galpin Society Journal*, 54 (2001), pp. 16–44 (p. 32), doi:10.2307/842443.
[107] Brée, *The Groundwork of the Leschetizky Method*, p. 5.
[108] Ibid, pp. 6–8.
[109] Ibid., p. 5.

and-down movements, but solutions to different articulation and sounds. Brée noted the movements required for different techniques in order to produce various tones on the piano. These finger motions include lifting, wiping, gliding, pressing, and turning.

a. Detaching/Lifting

When lifting fingers, a different sound can be produced depending on the playing tempo and speed of the fingers when lifting. Brée mentioned that detaching the fingers and lifting them quickly like in *staccato* would produce a pearly sound suitable for scales.[110] Although not specifically named, this technique is similar to my idea of the '*leggiero*' touch, where one plays in a semi *staccato* manner. A finger *staccato* also requires quick lifting of the fingers. It can be executed with the wrist held still, the finger curved and starting from a raised, high position, where the finger can strike the keys quickly and go back to its original position.[111]

On the contrary, holding longer on the note gives the opposite effect. Therefore, when *legatissimo* is required, rather than playing in a normal style where the previous finger lifts up when the next note is struck, the previous finger needs to hold slightly longer after the next note is played.[112]

[110] Brée, *The Groundwork of the Leschetizky Method*, p. 19.
[111] Brée, *The Groundwork of the Leschetizky Method*, p. 29.
[112] Brée, *The Groundwork of the Leschetizky Method*, p. 29.

b. Wiping Motion

When playing the same key using alternating fingers, Brée mentioned that the wrist should be held loosely, higher and turned outwards, so that the hand can follow the movement of fingers. As for the finger movements, Brée wrote:

> When fingers alternate on the same key, they moved only at the knuckles; they are held somewhat less curved than usual, and tips make a 'wiping' motion on the key.[113]

c. Pressing/Gliding

Gliding fingers are used to bind tones together, especially when playing *legato* octaves.[114] Pressing of the fingers, on the other hand, is used when emphasis of notes is required, such as, when emphasizing the melody line in chords. According to Brée, while fingers that take normal notes would remain easily rounded, the finger that holds the melody note would need to be pressed the deepest, obtaining a fuller tone to bring out the melody. This technique should also be supported by the wrist to emphasize the important note rather than providing equal pressures. If pedal is used, harmony notes could be lifted sooner with a gentle wrist lift, and only the melody notes need to be held down, binding the melody line as much as possible.[115]

d. Turning

Brée mentioned that 'special preparatory exercises' are required for the turning of fingers.[116] These exercises help students to focus on their own hand postures and

[113] Brée, *The Groundwork of the Leschetizky Method*, p. 27.
[114] Ibid., p. 33.
[115] Brée, *The Groundwork of the Leschetizky Method*, p. 56.
[116] Ibid., p. 12.

familiarize with the movements or postures of turning the thumb under to achieve the 'turning' technique such as, arching the fingers for when the thumb moves under. Brée also mentioned that one should play stronger on the note before and after the thumb to smoothen the turning section, making it less noticeable.[117] When passing the thumb under another finger, it must 'glide over the immediate keys', moving horizontally instead of rising in a high curve. One also must ensure that the hand movements are quiet, the wrist is loose but unmoved, and the elbow is not raised when turning.[118]

One could easily maintain the position of the hand without big or violent movements in the arm if the thumb glides to the next note without lifting or making a high curve motion. Correspondingly, when the thumb is raised too high, the forearm and hand have no choice but to thrust upwards to compensate for the movement. This rule must be followed even when the thumb needs to turn under other fingers over a large leap, but in this case, the wrist is allowed to move in the same direction as the hand.[119] Therefore, in playing scales, where the turning technique is widely used, the arm is not allowed to 'thrust forward with a jerk' when turning the thumb, instead, the arm should move horizontally, with a loose wrist but without up-down movements.[120] While a passive elbow was emphasized by both Hummel and Czerny, a slight advancement can be seen through Brée's instruction where loose wrists were needed. However, the reluctance of vertical or outwards movement of the elbows can still be observed, where they are only used in specific cases.

[117] Ibid., p. 14.
[118] Brée, *The Groundwork of the Leschetizky Method*, p. 14.
[119] Brée, *The Groundwork of the Leschetizky Method*, p. 16.
[120] Ibid., p. 18.

3.3.2 Use of Wrist

While the use of the wrist is absent in older treatises, it was one of the most important elements in Brée's instruction. She introduced the wrist exercises very early on in the book, right after the section of hand posture. She also mentioned in her book that after the posture of the hand is under control, one can attempt the lowering and raising the wrist following her instruction,[121] indicating that the wrist movements were taught in the beginning stages of piano playing. The wrist exercise is done by raising and lowering the wrist while pressing down five white keys firmly, and at the same time ensuring that the hand remains rounded, fingers retain their position, not raising higher than the original position, and that the upper arm does not follow the motion of the wrist.[122] It was also recommended that the wrist is moved vertically by lowering and raising when playing, without interrupting practice as it would avoid the stiffening of the hand.[123]

The wrist is used to complement the fingers when playing a *legato* melody line. As fingers alone do not have sufficient strength to produce a strong and full *legato* tone especially in *cantilena*, the wrist is able to support the fingers by contributing more pressure.[124] This could be done by adding an upward or downward movement of the wrist after the finger is pressed down deep into the key, producing a 'singing' tone.[125] The same movements could be applied when pressing down chords as well to avoid striking them and producing hard sounds.[126] In cases where slow successive chords occur, both upward or downward wrist movements could be used,

[121] Brée, *The Groundwork of the Leschetizky Method*, p. 4.
[122] Brée, *The Groundwork of the Leschetizky Method*, p. 4.
[123] Ibid., p. 5.
[124] Brée, *The Groundwork of the Leschetizky Method*, p. 29.
[125] Ibid.
[126] Ibid., p. 33.

but for playing in quick succession, it is recommended that only upward wrist movement is used.[127]

In relation to Leschetizky's use of wrists, it was widely known that Leschetizky was inspired by a Bohemian pianist, Julius Schulhoff's playing style.[128] He was deeply influenced by Schulhoff's touch after watching one of his performances in 1850, as well as his ability to make the piano sing.[129] He thought that the outstanding melody was due to the touch and that it would be the new way of playing in the future. He said, 'I practiced incessantly, sometimes even on a table, striving to attain firm fingertips and a light wrist, which I felt to be the means to my end'.[130] According to Leffler, this inspiration of the new way of playing became the driving force of his teachings.[131]

While I always thought that my techniques involved the use of wrists, it was not until I attempted Leschetizky's wrist techniques that I realised these wrist techniques were used much more and in a variety of ways that I have not explored or been taught. Other than using the wrist in playing melodies, the wrist can also help create a variation in playing *staccato*. Brée presented two different ways of playing *staccato*, by finger or by wrist. In executing a wrist *staccato*, there is less involvement of the fingers as it uses the striking lever of the wrist to throw the bent

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[127] Ibid., p. 33.
[128] Darrell G. Leffler, 'Czerny, Leschetizky, Vengerova: A Genealogical Study of Piano Pedagogy Technique' (unpublished M.A., San Jose State University), p. 27 <https://www.proquest.com/docview/304491088/abstract/88911A01983B4738PQ/1> [accessed 7 February 2022].
[129] Angele Potocka and Genevieve Seymour Lincoln, *Theodore Leschetizky : An Intimate Study of the Man and the Musician* (Century, 1903), p. 90 <http://archive.org/details/theodorelescheti00poto> [accessed 16 August 2021].
[130] Potocka and Lincoln, *Theodore Leschetizky,* p. 91.
[131] Leffler, 'Czerny, Leschetizky, Vengerova', p. 28.

fingers onto the keys.[132] A wrist *staccato* can be used when playing *staccato* octaves, where the finger width between thumb and little finger does not change, and playing is done by the fluttering movement of the wrist.[133] The same concept also applies to wrist *staccato* chords where the chords are played with a 'thrown stroke' from the wrist.[134] According to Brée, a certain tone colour such as the 'lifted tone' could also be produced with the help of the wrists. A lifted tone is a short touch created by firm finger joints and loose wrist. This tone could be created when the key is played lightly with a bent finger, and then lifted from the wrist.[135]

Apart from the vertical upwards and downwards movement, the twisting motion of the wrist was also introduced in Brée's book. For example, when playing octaves, where one of the notes is tied, the wrist should be placed in a higher position and played using twisting motion.[136] The motion of a twist similar to that of turning a key can also be seen especially in playing *arpeggios* where the first three notes can be prepared by the fingers, while the last note will require the 5th finger to take a quick turn to reach its note,[137] reminiscent of the rotation of the wrist that we are used to today.

The wrist is also used for achieving loud dynamics. When playing *forte* octave chords, a high-held, firm wrist is needed.[138] The wrist movements can also be extended to the hand and arms. For example, when playing slow successions of *forte*

[132] Brée, *The Groundwork of the Leschetizky Method*, pp. 29–30.
[133] Brée, *The Groundwork of the Leschetizky Method*, p. 32.
[134] Ibid., p. 35.
[135] Ibid., p. 30.
[136] Ibid., p. 32.
[137] Ibid., p. 48.
[138] Ibid., p. 32.

chords, the upward movement can be executed in a broader way where both the hand and the arm are raised.[139] Similar remarks were also made by Prentner in using the wrist. She stated:

> Sonorous chords are executed in the following different ways:
> The fingers are placed in readiness on the keys, which they strike strongly with the full assistance of the arm, whereupon the wrist by a slight depression and then return to its normal height, relaxes the strain of the arm, thus avoiding any fatigue during the holding down of the chord.[140]

Another aspect of performing with the wrist mentioned by Brée was wrist tension. While it may be hard to observe or track, it could be felt by the performing pianist. Wrist tension could be used when executing gradual dynamic changes such as *crescendo*s and *decrescendo*s. For example, the wrist can help with the execution of a *crescendo* by starting with a loose wrist and increasing the wrist tension when getting gradually louder.[141] As the wrists could help in achieving many elements of music, they should not be held stiffly when playing chords to avoid over-tiring the hands. Instead, they must be relaxed right after striking the note to avoid wasting unnecessary strength.[142]

These examples showed that while some uses of the wrist presented some common points with what we see today, others may not be used anymore in present day performances. Nevertheless, these movements revealed a series of explorations

[139] Ibid., p. 34.
[140] Prentner, *Leschetizky's Fundamental Principles of Piano Technique*, p. 44.
[141] Brée, *The Groundwork of the Leschetizky Method*, p. 61.
[142] Ibid., p. 34.

on techniques that were underway diverging from the Classical treatises where wrists were set to be straight and unmoved in playing.

3.3.3 Use of Hand and Forearm

Similar to Czerny's treatise, the use of hand and forearms can be seen to be involved in some techniques. In Brée's book, the hand and forearm are used at the last stages when playing *portamento* where Brée said 'Finally, in the *Portamento*, the finger presses down the key slowly, holds it firmly for a moment, and is then lifted by slowly raising the hand and forearm.' [143]

The hand and forearms are also used to move horizontally when making wide leaps. Similar to Czerny's movements, Brée noted that the motion of the hand should not produce a curve, instead, it should move horizontally along the edges of keys.[144] The hand motion of striking needs to be done with a dropped wrist, and the leaped note should be played with the edge of the little finger and not the tip. Brée claimed that this method prevents the hand from blocking the keys and lets the eyes focus on the note. The same concept of holding hands close to the keyboard also applies when playing a large leap on black keys, except that the wrist is not dropped.[145] Also, when notes are further apart, sideways movement is permitted to bring the hand to a posture that can conveniently play the next note.[146] She claimed that the wrist would soon follow the movement of the fingers after following the rules when training the fingers and hands.[147]

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[143] Brée, *The Groundwork of the Leschetizky Method*, p. 31.
[144] Brée, *The Groundwork of the Leschetizky Method*, p. 79.
[145] Brée, *The Groundwork of the Leschetizky Method*, p. 80.
[146] Ibid., pp. 78–79.
[147] Ibid., p. 79.

The above finger, wrist, and hand movements have shown clear signs of development in terms of techniques and the instruments used. This can be seen not only from Leschetizky's techniques, as Franz Liszt, even though also a student of Czerny, was observed using a pliable hand shape with flexible position. For instance, Madame Auguste Boissier, whose daughter studied with Liszt, described that 'Liszt did not keep his hands "in a rounded position" nor were they "altogether flat", but rather his fingers were "so flexible as to possess no fixed position"'.[148] Alan Davison believed that the evolution of keyboard techniques developed by Liszt and his contemporaries were in opposition to the limiting finger focused approach as well as the quiet arm.[149] Furthermore, not only did pianists depart from the non-*legato* touch of the classical period, some also aimed for more *cantabile* and fuller touch,[150] which aligned with Leschetizky's wrist technique that is especially used for *cantilena* sections.

The additional use of body parts in piano playing has given pianists the opportunity to integrate them into their performance, as well as using them as a solution to produce particular tone qualities. Other than Brée's use of the wrist in creating lifted tones[151] and wrist pressure for a full and strong *legato*,[152] the use of body parts was also continued by pedagogues well beyond the nineteenth century to enhance piano playing techniques. For example, in explaining the *staccato* techniques, Gyorgy Sandor (1981) said:

[148] Alan Davison, 'Franz Liszt and the Development of 19th-Century Pianism: A Re-Reading of the Evidence', *The Musical Times,* 147.1896 (2006), pp. 33–43 (p. 37), doi:10.2307/25434402.
[149] Davison, 'Franz Liszt and the Development of 19th-Century Pianism', p. 36.
[150] Ibid., p. 35.
[151] Brée, *The Groundwork of the Leschetizky Method*, p. 30.
[152] Ibid., p. 29.

> ‘If the arm in its totality functions well and if it is activated by the strongest muscles of the body (the chest, back, stomach, and diaphragm), we can achieve maximum speed and volume with no strain.’[153]

In using Beethoven’s piano sonatas that involve octaves and chords as examples, Seymour Fink (1992) said: ‘use forearms for power’, ‘bounce your right hand with wrist held high, renewing the arm impulse every three chords.’[154]

However, Leschetizky did not agree with the use of excessive motions and movements of the body only for the purpose of performance as he thought that they only distract the audience’s attention from the music to the performer.[155] Brée, being Leschetizky’s student, held a similar opinion and acknowledged that exaggerated movements may help with the indulgence of a virtuosic performance, but reiterated that movements must be done in moderation where necessary movements such as wrist movements, relaxation of the hands or joints, motions of arms for certain dynamics and articulations are done in a natural manner.[156]

3.3.4 Prevention of Injury, Fatigue of Hands and Optimizing Playing

Apart from improving on various techniques from the Classical period, Leschetizky’s method teaches students to work in the most optimal way. His method combines the knowledge of the anatomy of the hand with the techniques of piano playing. For example, Brée advised readers not to hold inactive fingers spasmodically to avoid

[153] Sandor, *On Playing Piano*, p. 93.
[154] Fink, *Mastering Piano Technique*, p. 165.
[155] Potocka and Lincoln, *Theodore* Leschetizky, p. 306.
[156] Brée, *The Groundwork of the Leschetizky Method*, p. 78.

wasting too much strength, but one does not need to worry if little movements were created by the third, fourth or fifth finger when these fingers are being used as it is a result of a common tendon. In fact, overcoming this would even cause stiffness in the wrist.[157]

We can start to notice that the techniques were developed with regards to the necessary protection needed for the hands. It was also clearly mentioned that the unnecessary movements to be avoided can help save strength. Furthermore, Brée's teachings on Leschetizky's techniques showed careful consideration for prevention of fatigue in the hands. For example, one should relax instantly and avoid holding a stiff wrist after striking chords to avoid using more strength than necessary for holding keys down.[158] Some other examples of fatigue prevention include Brée's mention of how Rubinstein and Leschetizky hold their fingers easily in a shape of a fist when lifted up from striking slow chords,[159] and her advice to use alternate fingers when required to play long trills quickly and evenly for a long period of time.[160]

In conclusion, despite Leschetizky's claim that he taught exactly the way Czerny taught him, developments of techniques can be clearly seen alongside some similar concepts being passed down. Apart from the horizontal movements of the hand that were largely the same with some adjustment in using wrists, small differences could also be seen in Leschetizky's hand posture in comparison to Czerny's, and more development could be seen in the use of the wrists. While Brée

[157] Brée, *The Groundwork of the Leschetizky Method*, p. 11.
[158] Brée, *The Groundwork of the Leschetizky Method*, p. 34.
[159] Ibid., p. 35.
[160] Ibid., p. 59.

did not include as many technical exercises as Czerny, her exercises and examples focused on showing clear postures and how one can employ the techniques mentioned.

It is rather common to see transformations especially when techniques were passed on to the future generations, just as some transformations could also be seen through the pedagogues' students over the years. One example can be seen through the lowering and raising of the wrists, one of the most important traits followed by Leschetizky's students. His students, Malwine Brée and Marie Prentner, who both published materials on Leschetizky's techniques, followed this way of playing and emphasized it in their books. The movement of lowering and raising the wrist started as just a small and subtle movement to make sure the wrist was free, and that it can be used for *cantilena* melodies, phrasing, or freeing of the hand. However, it is also possible for this movement to develop overtime, into a more prominent movement with larger actions. Isabelle Vengerova, a student of Leschetizky, used the wrist extensively, and her instruction included raising the wrist as high as possible in playing accents, as well as wrist movements that developed beyond up-down movements.[161]

Leschetizky, being a professor at the Russian Conservatory, made a significant impact on the Russian school of playing. Many Russian pianists' approaches, postures, and techniques can easily be connected to Leschetizky's instructions despite some adjustments.[162] According to Florence Trumble, Leschetizky's mechanical principals were also used as a foundation for many

[161] Leffler, 'Czerny, Leschetizky, Vengerova', pp. 63–64.
[162] Chang, 'The Russian School of Advanced Piano Technique', pp. 14–15.

systems and methods of piano playing in the United States.[163] In other words, his techniques spread far and wide, and it may be possible that his use of wrist sowed a seed that may have influenced the wrist movements later in time. While there is no evidence that it is his movements that developed into the wrist rotation that I know of today, Fink mentioned a similar technique in his book. In Fink's pulling arm *legato*, instead of only moving the wrist up and down, lateral movements were added, developing the technique into circular movements of the arm, with a similar function — to 'enhance the feeling of *legato*'.[164] By studying Leschetizky's techniques, we are starting to see resemblances to the approaches of the more modern pedagogues. While some of Leschetizky's methods may no longer be in use or have evolved over time, we can still see his lasting influence on piano techniques.

[163] Ibid., p. 5.
[164] Fink, *Mastering Piano Technique,* p. 78.

3.4 Ludwig Deppe's Techniques through Technique Books Published by His Students

Ludwig Deppe, as someone who was mainly self-taught,[165] broke free from the older finger technique and playing styles of earlier pianists. Scholars today believed that Deppe's techniques were a pivotal point for modern piano techniques. According to Stephen Siek, Deppe was among the earliest to use the terms 'weight' and 'relaxation' in piano playing.[166] Reginald Gerig believed that Ludwig Deppe was the first piano teacher who combined both the use of arm and finger techniques[167] and that his method brings about the 'true beginnings of the modern era of piano technique'.[168] Thomas Fielden (1932) said:

> If you will read either Miss Amy Fay's Music Study in Germany or C. H. Ehrenfechter's book on the Deppe method you will soon find how this great man's ideas on playing have revolutionised modern technique.

Fielden further noted that Deppe founded his piano techniques through observing the use of arm movements created by pianists such as Liszt and departed from rigid finger exercises.[169] He also thought that Deppe, together with Breithaupt and Busoni, made Liszt's influence understood by more pianists. According to Judith Pfeiffer, Deppe formed his method on natural body movements including the use of free

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[165] Tom J Novara, 'A Comparative Analysis of the Writings and Technical Approach of Ludwig Deppe and His Contemporaries in Piano Pedagogy' (unpublished master's thesis, Southern Illinois University Carbondale, 2015), p. 1 <https://opensiuc.lib.siu.edu/cgi/viewcontent.cgi?article=1804&context=gs_rp>.
[166] Stephen Siek, *A Dictionary for the Modern Pianist* (Rowman & Littlefield, 2016), p. 37.
[167] Reginald R. Gerig, *Famous Pianists & Their Technique*, New ed. (Indiana University Press, 2007), p. 236.
[168] Ibid., p. 252.
[169] Thomas Fielden, 'The History of the Evolution of Pianoforte Technique', *Proceedings of the Musical Association*, 59 (1932), pp. 35–59 (pp. 50–52), doi:10.1093/jrma/59.1.39.

movements of the arm by observing and analysing the playing of great pianists of his time, especially Franz Liszt,[170] apart from being inspired by the free and graceful arm movements of violin players.[171] In fact, at the time when adopting practices of performing artists was opposed by many teachers due to their ways of playing, such as using the arm in playing *staccato*, Deppe believed that 'a wholesome distribution of effort over every part of the playing apparatus from shoulders to fingertips was the key to acquiring mastery of the playing technique' and taught it to his students.[172]

While some aspects of his piano techniques carried hints of similarities with modern piano techniques, there are also many differences and elements that he emphasised which are not practised or maintained anymore. Deppe himself did not leave many instructions on piano techniques behind apart from an article titled *'Armleiden des Klavierspielers'*, that he published in *Deutsche Musiker-Zeitung* in 1885.[173] In the article, he discussed physical instructions such as seat height and hand positions, as well as tone production. He intended to develop a collection of piano studies along with his methods, but passed away before they were formalized and published.[174] Fortunately, two of his students, Elisabeth Caland and C. A. Ehrenfechter, published books on Deppe's techniques, and his techniques were mostly aligned between the two books. Therefore, this research will realise Deppe's techniques primarily through Caland and Ehrenfechter's books. Caland published *Artistic Piano Playing as Taught by Ludwig Deppe Together with Practical Advice*

[170] Judith Pfeiffer, 'Amy Fay and Her Teachers in Germany' (unpublished doctoral dissertation, The University of Memphis, 2008), p. 2 <https://www.unav.es/gep/AmyFayHerTeachersInGermany.pdf>.
[171] Pfeiffer, 'Amy Fay and Her Teachers in Germany', p. 62.
[172] Roger C. Boardman, 'Ludwig Deppe's Piano Teaching', *American Music Teacher*, 25.4 (1976), pp. 5–8 (p. 5) < https://www.jstor.org/stable/43534679>.
[173] Gerig, *Famous Pianists & Their Technique*, p. 252.
[174] Ibid., p. 252.

on Questions of Technique in 1903, and Ehrenfechter published *Technical Study in the Art of Pianoforte-Playing (Deppe's Principles) with Numerous Illustrations* in 1891. As Deppe had already passed away when Caland published her book, there was no specific endorsement from Deppe, unlike Leschetizky's approval of Brée's book. However, through Caland's words, we know that it was Deppe's wish for Caland to translate his system into writing. Caland wrote in the introduction that:

> Deppe was very urgent in his desire that I should reduce his system to writing, and thus render it permanent. It was my wish to arrange and complete his notes and records immediately after his death; the pressure of circumstances, however, has delayed the fulfilment of my intention until now, some seven years later.[175]

His instructions can also be found through Gerig's book, where most of Deppe's essay is reproduced. Another source of Deppe's techniques, although not a method book, is Amy Fay's *Music Study in Germany*[176] where she wrote about her time studying with Deppe and included some of Deppe's instructions on piano playing.

3.4.1 Physical Approaches and Techniques

Deppe has his own playing style that involves a different seating height and specific usage of certain muscles or body parts, which produces his characteristic playing style and his famous feather-light hand approach that I will discuss in subchapter 3.4.3 While seating height was not heavily emphasised by the other pedagogues

[175] Elisabeth Caland, *Artistic Piano Playing as Taught by Ludwig Deppe Together with Practical Advice on Questions of Technique*, trans. by Evelyn Sutherland Stevenson (G. Schirmer, 1903), p. 16.
[176] Amy Fay, *Music Study in Germany*, ed. by Melusina Fay Peirce, 9th edn (A. C. McClurg, 1886).

included in this research, it was one of the most important instructions for Deppe's playing approach. His approach required one to sit at a low seating position and was the first step in preparing a student for their hand position. The low seating position would help in eliminating the weight of the arm and alleviate heavy playing. According to Caland, a low chair is to be used as sitting high will inevitably place a part of the arm's weight on the fingers making the hand heavy, but when sitting low, one can make use of the shoulder and back muscles to sustain and carry the weight of the arm and thus result in Deppe's approach of 'light as feather' hand.[177] Similarly, Ehrenfechter noted that sitting high with the arm and hand forming a straight line would result in the hand, wrists and fingers bearing the weight of the forearm, but the proper position can be achieved when one sits at a low position, and the elbow placed about one or two inches lower than the keyboard.[178] The elbows need to be kept at the same position without sticking out,[179] and also as close to the body as possible without compulsion.[180] In maintaining a low seating position, Deppe, as cited in Gerig, also provided an alternative, saying:

> The low seat, by the way, by no means requires an abnormally low chair; on the contrary, the matter can be corrected at once by elevating the legs of the piano just a few centimeters.[181]

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[177] Caland, *Artistic Piano Playing as Taught by Ludwig Deppe Together with Practical Advice on Questions of Technique*, p. 22.
[178] C. A. Ehrenfechter, *Technical Study in the Art of Pianoforte-Playing (Deppe's Principles) with Numerous Illustrations* (W. Reeves, 1891), p. 21 <http://onlinebooks.library.upenn.edu/webbin/book/lookupid?key=ha008699445> [assessed 24 Jan 2023].
[179] Ibid., p. 24.
[180] Caland, *Artistic Piano Playing as Taught by Ludwig Deppe Together with Practical Advice on Questions of Technique*, p. 26.
[181] Ludwig Deppe, 'Armleiden des Klavierspielers', p.315, cited in Gerig, *Famous Pianists & Their Technique*, p. 254.

3.4.2 The Wrist, Hand, and Fingers

Deppe's techniques emphasised the involvement of the hand and arm in playing and considered the finger as the medium that presses down the key, departing from Czerny and Hummel's finger techniques. Instead of focusing on just the fingers to connect the tones, Deppe's method uses the entire hand and arm to direct the fingers into the keys. The movements of the hand towards either side of the keyboard can be done by bending the upper body slightly so that the mutual relation of the hand parts is unchanged.[182] Departing from the finger school techniques, the use of fingers in Deppe's approach is to draw out the sound rather than hammering the keys. The finger should fall of its own weight, without being thrown, pushed or played with a blow, as Deppe always said: 'Do not strike, let the fingers fall'.[183] Due to the hand movements and the position of hand, the finger movements in Deppe's approach are rather natural where one presses down or sinks down onto the keys.[184] In explaining Cramer's exercise (see Figure 3.14.), Caland wrote:

> When the thumb has reached G, then, instead of turning the hand sharply to the right and throwing the finger on to the next key, the hand pivoting easily on the thumb, is carried in unaltered pose to a point which enables the second finger to sink with perfect naturalness onto its key.[185]

[182] Caland, *Artistic Piano Playing as Taught by Ludwig Deppe Together with Practical Advice on Questions of Technique*, p. 36.
[183] Caland, *Artistic Piano Playing as Taught by Ludwig Deppe Together with Practical Advice on Questions of Technique*, p. 29.
[184] Ibid., p. 55.
[185] Ibid., p. 50.

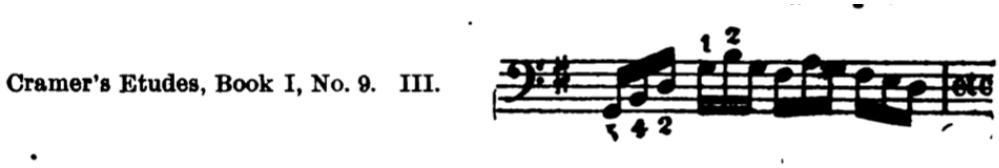


Figure 3.14. Cramer's exercise.
Taken from Artistic Piano Playing by Caland (New York, G. Schirmer, 1903, p.49)

This approach reminds me of a marionette, where strings control the movement of the joints and limbs. Similar to this situation, in Deppe's approach, the movements come from the hand, not the fingers itself. When the hand is carried to the right place where the finger can sink into the keys, finger strikes are not needed anymore.

Both Caland and Ehrenfechter mentioned that the wrist needs to be held high. While Caland said that the wrist is to be held just slightly higher than the back of the hand where one can see an upward slope towards the wrist from the back of the hand,[186] Ehrenfechter emphasized the importance of a flexible wrist. Ehrenfechter compared the wrist to a lion's paw, where it is flabby, but retained a great strength in the paw.[187] The outer part of the wrist, according to Caland must not sink, but rather needs to be turned upwards from the keyboard, while Ehrenfechter said the back of the hand needs to be level with the keyboard, or better still, slightly elevated in the outer part to strengthen the weaker part of the hand, and accommodate the third and

[186] Caland, *Artistic Piano Playing as Taught by Ludwig Deppe Together with Practical Advice on Questions of Technique*, p. 27.
[187] Ehrenfechter, *Technical Study in the Art of Pianoforte-Playing (Deppe's Principles) with Numerous Illustrations*, p. 23.

fourth fingers.[188] The outer part of the hand and the forearm should be a straight line, and will form a right angle when looked over from the top (see Figure 3.15.).[189]



PLATE III.

Figure 3.15. Top view hand position.
Taken from Artistic Piano Playing by Caland (New York, G. Schirmer, 1903).

According to Caland, the muscle connection of the hand and forearm became most direct and positive in the straight-line position, creating a 'rapport'. When the 'rapport' is broken, the fourth and fifth fingers will no longer be parallel to the keys and would result in the loss of freedom and power.[190] Amy Fay mentioned that in

[188] Ehrenfechter, *Technical Study in the Art of Pianoforte-Playing (Deppe's Principles) with Numerous Illustrations*, p. 24.
[189] Caland, *Artistic Piano Playing as Taught by Ludwig Deppe Together with Practical Advice on Questions of Technique*, p. 26.
[190] Caland, *Artistic Piano Playing as Taught by Ludwig Deppe Together with Practical Advice on Questions of Technique*, p. 28.

accomplishing the regulation position where the wrist turns slightly outwards and the outer of the hand (third fourth and fifth finger) in a higher position, it gives the three fingers, especially the fourth finger, more freedom and space to facilitate lifts.[191] Fay even produced an exercise that would aid the movement of the wrist. The exercise uses the third, fourth and fifth fingers to play a repeating pattern of three successive keys ascending upward. The exercise helped facilitate the outward turning of the wrist that will help in supporting each finger.[192] These positions for the hands showed hints of similarities to some techniques that still exist today, while being much more restrictive. The idea of turning the third, fourth and fifth fingers, making them parallel to the keys for stronger and more powerful fingers can still be seen today. However, the elbow is not as restricted for pianists today as they would recommend extending the elbow outwards to complement the parallel fingers. For example, according to Xiao Yang, the *arpeggio* (while not specifically noted, I assume bars 26–27 and bars 29–30) in the right-hand section of Mozart's Sonata K.545 in C major can be done more effectively by moving the upper arm slightly away from the body when playing the fifth finger. She also noted that moving the upper arm outward can help with executing ascending scalic passages more freely and with evenness.[193] Yang also applied newer approaches such as those by Gyorgy Sandor, Abby Whiteside, and Otto Ortmann, to Classical repertoires.[194] She provided suggestions of using these techniques and hand movements to *sonatinas*, suggesting that these should be made known and taught to students tackling preparatory pieces

[191] Amy Fay, *Music Study in Germany*, ed. by Melusina Fay Peirce, 9th edn (A. C. McClurg, 1886), p. 289.
[192] Pfeiffer, 'Amy Fay and Her Teachers in Germany', p. 78.
[193] Xiao Yang, 'Helping Developing Pianists Prepare for the Sonatas of Haydn and Mozart: A Sequenced Approach to Technique and Artistry' (unpublished doctoral dissertation, Texas Tech University, 2019), p. 20 <https://hdl.handle.net/2346/85249> [accessed 17 January 2023].
[194] Yang, 'Helping Developing Pianists Prepare for the Sonatas of Haydn and Mozart', pp. 19–22.

that can then be applicable to larger or major works.[195] She pointed out the connection between arm movements, such as the drop and lift motion, and their interaction with phrasing and articulation, showing how these movements can help students feel the impulse from executing notes of smaller values to longer values, and how they facilitate different articulations.[196] These techniques became a means to interpreting and bringing out these elements of classical music more effectively on a piano.

A similar technique that involved extending the elbow was also mentioned by Jacobson and others; the upper arm must follow the hand by moving away from the body when performing lateral motion. This lateral motion is best experienced in playing *glissandos* and can also be applied in playing scales. In describing an upper arm rotation, Jacobson and others also said:

> For a common RH roll, the arm drops and the upper arm moves back slightly to start the roll. Then it moves outward to finish the roll. Finally, it moves inward toward the body to its resting position.[197]

Seonghyang Kim also demonstrated Seymour Fink's technique — the arm abduction lateral motion — that involved the extending of elbows outwards and explained that it is the basis to moving sideways on a keyboard. He further explained that one can only play within the horizontal angle of the elbow when the upper arm is very close

[195] Yang, 'Helping Developing Pianists Prepare for the Sonatas of Haydn and Mozart', p. 24.
[196] Ibid., p. 31.
[197] Jeanine M. Jacobson, E. L. Lancaster, and Albert Mendoza, *Professional Piano Teaching: A Comprehensive Piano Pedagogy Textbook* (Alfred Music, 2015), II, p. 122.

to the body, therefore wide leaps are difficult to play without the lateral forearm motion.[198]

The influence of Classical techniques and early Romantic techniques, for example Hummel's emphasis of the passive position of the elbows, stressing that they have to be placed near one's body, or Czerny's techniques that emphasised the calm and quiet hand while playing, can still be seen in Deppe's techniques. Although Deppe's techniques used a combination of hand, arm, shoulder, and wrists together with his emphasis of curvilinear movements, and was considered a newer approach, restrictions in elbow movements were still quite prominent, which would then directly influence the hand movements of a pianist. Deppe believed in the 'economy of movement' where extraneous movements must be avoided. However, considering the instruments used in the nineteenth century, smaller movements and lesser force seemed more suitable, and the definition of extraneous movements would have differed greatly compared to the twenty-first century.

On the modern piano, attempting to use a slightly different approach with only small adjustments can result in variations in the outcome. Extracted from my own reflection log from 24th October 2022, I wrote:

> The difference in movements has resulted in a different approach to the finger playing the note. I started with Deppe's posture where the wrist was raised quite high, therefore not using much wrist in playing, but rather the arm. This

[198] Seonghyang Kim, 'Seymour Fink's Mastering Piano Technique: Understanding Basic Technical Movements' (unpublished doctoral dissertation, University of Kansas, 2018), p. 28 <https://hdl.handle.net/1808/27108> [accessed 23 August 2020].

> change of movement has led me to play the leaped chords inaccurately as using Deppe's posture would mean that I need to approach the chord from the top instead of from the side, which threw me off a little.

I tend to identify myself with utilizing the hand and arm in piano playing and thought that it would be easy to adapt since they might be similar. However, by only adjusting a small segment of the hand position, I ended up with an entirely different way of approaching a key. One of the reasons for this was that while Deppe's instruction also involves the arm, it was not used to transfer weight of the arm and back onto the keys. Instead, it supports the hand through the arm and shoulder, guiding the hand to the desired position when playing.

3.4.3 The Feather-light Hand

The light hand was one of the most important features of Deppe's techniques. Amy Fay, who studied with Deppe, quoted his words: 'Your elbow must be lead and your wrist a feather.'[199] But to make this happen, Caland mentioned in her book that the arms and shoulder played an important role in carrying the hand, making it light. She wrote that 'to convey an impression of ease and lightness, […] it (the hand) must be quite freed from the hampering weight of the arm'.[200] She further noted that the hand will be light when it is carried rather than carrying itself.[201] Therefore, one needs much control over the muscles of the hand. For example, she used dumbbells by carrying them when walking and switching hands halfway as an exercise to train and

[199] Fay, *Music Study in Germany*, p. 293.
[200] Caland, *Artistic Piano Playing as Taught by Ludwig Deppe Together with Practical Advice on Questions of Technique*, p. 20.
[201] Ibid.

strengthen her muscles.[202] Ehrenfechter also emphasised the importance of the arm as she suggested that one should have acquired a certain amount of strength before touching a single key.[203]

To make sure that one is using the correct body part — the shoulder and back — to carry the arm and hand, Caland also suggested an exercise where one raises the arm very slowly until both the hands were above the head (Figure 3.16.), then sinking and lowering the hand until the fingers touch the key very lightly.[204] As these instructions are interrelated, the previous instruction of using a low seat or chair works in tandem with the use of shoulder and back muscle. This also explained why Deppe considered the low seat 'of paramount importance' as it made the use of shoulder and back muscles necessary.[205]



Figure 3.16. Plate 1- demonstration of suggested exercise.
Taken from Artistic Piano Playing by Caland, p. 21 (New York, G. Schirmer, 1903).

[202] Ibid.
[203] Ehrenfechter, *Technical Study in the Art of Pianoforte-Playing (Deppe's Principles) with Numerous Illustrations*, p. 22.
[204] Caland, *Artistic Piano Playing as Taught by Ludwig Deppe Together with Practical Advice on Questions of Technique*, p. 21.
[205] Ibid., p. 22.

This exercise is done to make sure that one focuses on the muscles of the shoulder and the back, making sure that these muscles work conjointly in carrying the arm. I personally find this a useful exercise especially in the learning of Deppe's techniques as I am unsure which part of the hand was being used at times, considering that more than a single part of the hand was involved in piano playing. This exercise focuses on the back and shoulder muscles and provides pianists a way towards the correct approach of using the shoulder to carry the hand as required by Deppe. However, I initially found this to be a tiring approach for the back and shoulder, probably because my shoulder muscle hadn't been used in this way before, though someone with a different technical background or experience might feel otherwise. This also explained why Caland carried a dumbbell when walking as part of her training. Additionally, while one needs to use the shoulder and back muscles, it was repeatedly mentioned that one should avoid any elevation of the shoulders, which points towards maintaining a natural state of the shoulder.

However, Deppe was not the only one who advocated for using a light hand. Similar concepts were also mentioned in Josef Lhevinne's instruction to acquire delicacy. He wrote, 'the forearm must feel so light that the player has the impression that they are floating in the air. The mental attitude here is very important. Delicacy is inconceivable with a heavy arm'.[206] He further mentioned that 'it can be held in position over the keys with entire absence of nervous tension or stiffening, with the "floating in the air" feeling that makes for the first principle of delicacy'.[207]

[206] Josef Lhevinne, *Basic Principles in Pianoforte Playing* (Dover Publication, 1972), p. 53.
[207] Ibid., p. 53–54.

a. Movements for Feather-light Hand

The postures and movements discussed thus far are a means to the feather-light hand. According to the video *Piano Technique and Posture in the Early nineteenth Century* by Kobb, a researcher who reconstructed the Viennese piano techniques from the 1820s, one difference between the historical and modern techniques is that historical techniques require an upright position with shoulder rolled backwards, while modern techniques use more of a hunched back where arm weight is easily transferred onto the keyboard.[208] Caland said: ' […] according to Deppe's rule, "as light as a feather", and as we have seen, this lightness is an impossibility unless the shoulder, not the hand sustains and carries the weight of the arm'.[209] Apart from emphasizing the light hand, this instruction also promotes a more integrated use of the entire arm and hand rather than focusing on an isolated part of the hand or finger. Just as Gerig said '[t]he first major pioneer teacher of an effective system combining both arm and finger technique was Ludwig Deppe (1828–1890)'.[210]

While Deppe's technique attempted to use the entire arm and engaged the shoulder and back muscle in carrying the hand, it did not utilize the full weight of the arm, shoulder, and back, to the extent advocated by later pedagogues. For example, Deppe's feather-light technique seem to contrast with the technique where one leans forward and applies the weight of the back and shoulder onto the keyboard. Although this is only one of the many ways that afforded strength in playing, the same

[208] Christina Kobb, 'Viennese Piano Technique of the 1820s and Implications for Today's Pianists', *Music and Practice*, 4(2019), doi:10.32063/0403. Also see Video 2 around 01:10 for explanation on modern posture.
[209] Caland, *Artistic Piano Playing as Taught by Ludwig Deppe Together with Practical Advice on Questions of Technique*, p. 22.
[210] Gerig, *Famous Pianists & Their Technique*, p. 236.

technique was also articulated by Josef Lhevinne in reference to Rubinstein.[211] I, too, used this approach in my own technique in subchapter 4.4 when comparing against Deppe's technique.

Lhevinne described Rubinstein's posture in playing with force and strength using a drawing of him where he inclined towards the keyboard, which he commented, goes against most instruction books. Lhevinne further noted that the way Rubinstein used the weight of his shoulder and body in forte passages led to good results where he was heard over the entire orchestra playing fortissimo, without bad qualities of tone such as pounding or noise.[212] While this may not be universal to all pianists, this particular technique was introduced and taught to me during my undergraduate studies and has been one of the techniques I use in delivering loud passages. When comparing these two techniques that involved the use of arm and back muscle, the kinaesthetic sensations from Deppe's approach was quite different from leaning forward onto the keyboard. Extracted from the self-reflection log on 22 Nov 2022, I wrote:

> Therefore, when practising using the whole arm with the shoulder and back carrying it, it is a common scenario that I feel tired at the upper arm, near my shoulder as the weight of the arm and hand were hung from the shoulder. On the other hand, the hand and wrist are mostly kept in an easy position where they do not exert much force, but rather used as a medium of the arm to move around and play the keys. It almost feels like the hand and fingers are

[211] Lhevinne, *Basic Principles in Pianoforte Playing*, pp. 59–62.
[212] Lhevinne, *Basic Principles in Pianoforte Playing*, pp. 59–62.

controlled as a marionette puppet where their limbs were controlled by strings from above.

Following Kobb's line of thought, it can be assumed that the reason I felt tired when practicing Deppe's techniques was because his techniques required the shoulder and back to sustain the weight of the arm and hand, while I was more used to applying the weight of the shoulder and arms to push down on the keys transferring the weight onto the keyboard. Therefore, Deppe's techniques would result in fatigued shoulder and back muscles at first for as someone who is not accustomed to using the shoulder or back to carry the entire arm over the keyboard.

3.4.4 Circular, Curvilinear, Arc and Semi-circular Hand Movements

In Deppe's opinion, a piano performance only looks pretty when doubled, jagged and extraneous movements are eliminated, and only the necessary movements are used.[213] Deppe was also against pianists who 'saw the air with their hands, and who moves their elbow after a fashion which calls up vision of cobbler at work on his bench', and according to Caland, 'nothing caused him greater nervous irritation than to see and hear a pianist in whose performance one sought in vain for a sweet and mellow tone, or a beautiful movement'.[214] It could be said that Deppe's aesthetic values were quite different from the diverse approaches today where different extents of physical gestures and movements can be seen. Instead, he believed in 'simple, rounded movements', and that all beautiful movements were more or less curved.[215] Therefore, movements such as arcs, semicircle or circular movements were used and

[213] Caland, *Artistic Piano Playing as Taught by Ludwig Deppe Together with Practical Advice on Questions of Technique*, p. 18.
[214] Ibid., p. 19.
[215] Ibid., p. 33.

explained in Caland's and Ehrenfechter's books. They were used in phrasing, passages, scales, or in connecting notes or phrases, and these movements carried aesthetic value, as well as affecting the tone produced in ones playing.

Producing these circular movements would often require the combined use of the hand and the wrist. For example, in playing an ascending scale with Deppe's approach, the hand and wrist will move in an arc. It starts with the wrist being held high, and lowered a little on the second, and more on the third note, producing a curvilinear movement.[216] While Ehrenfechter did not link the curvilinear approach to playing scales, she emphasized the movement of the hand, saying that the hand should move with the support of the arm, to the right, when playing first three notes of the scale to bring the thumb close to the fourth note. This movement was important to eliminate the quick jerk in turning the hand.[217] Therefore, the binding of tones is done by the hand itself, and when performed correctly, the hand will move in a slightly oblique fashion. The circular movements that reveal itself through the raising and lowering of hand, also assist in the shaping of phrases and can also be applied in playing a piece of music through more sophisticated ways where the curves may blend into each other as well.[218]

In the process of attempting and understanding the curvilinear movements in the practice room, some of my personal accounts on these movements were included

[216] Caland, *Artistic Piano Playing as Taught by Ludwig Deppe Together with Practical Advice on Questions of Technique*, p. 35.
[217] Ehrenfechter, *Technical Study in the Art of Pianoforte-Playing (Deppe's Principles) with Numerous Illustrations*, p. 49.
[218] Caland, *Artistic Piano Playing as Taught by Ludwig Deppe Together with Practical Advice on Questions of Technique*, pp. 37–38.

in my self-reflection logs from the 8th of December 2022, and the related sections were extracted as below.

> I tried out the curvilinear movements, especially on the first three notes of a C major scale according to the instructions in Caland's book.[219] The curvilinear movement in the first three notes are quite subtle. I followed the instructions by starting with an elevated wrist and slowly sink the wrist lower on the second note and even lower on the third, going to the regulation position. This was not too far off from the circular motion I use today, except this was more focused on the wrist than the whole arm. The circular motion goes from an elevated wrist to the extended outward position where the outer hand and arm make a straight line, unlike my own techniques where I can go much further outwards where my elbows are extended. This then leads me to think about the relation between Deppe's beginning of a curvilinear movement, how it leads to the regulation position that he claimed to be able to provide a rapport for the third, fourth and fifth finger, and the more modern approach where one extends the elbow outwards.

These circular motions invariably involve wrist movements and would also remind modern pianists of the circular wrist movements that we use today. However, according to Deppe's instructions, the elbow position is similar to that of Hummel's, where it should point downwards rather than outwards, and needs to be kept near the body as it may change the position of the hand and arm if not followed. Caland said in her book that the elbow should be the centre of gravity of the arm, quoting Deppe

[219] Caland, *Artistic Piano Playing as Taught by Ludwig Deppe Together with Practical Advice on Questions of Technique*, pp. 34–35.

who said the elbow should be like lead.[220] However, in the modern techniques, elbows are not restricted to the position close to the body. For example, the extending of elbows outwards can be observed in the performance of the famous Claudio Arrau. At the beginning of his performance of Schumann's Carnaval, Op. 9, 'Préambule', it could be seen, despite the poor lighting of the recording, that he started with a preparatory movement of the arm by lifting and dropping his arms before playing the opening chords that demonstrated the outward extension of elbows.[221] Von Arx described his movements saying, 'his elbows also rise with their points facing outward, and the wrists bend, allowing hand and fingers to point downward towards the keys'.[222]

I also attempted the laterally circular movements with the example of descending scalic passages provided by Caland (Figure 3.17) and experimented on the depicted movements on the 14th of Dec 2022. My interpretation of the movements was noted as follows.

[220] Caland, *Artistic Piano Playing as Taught by Ludwig Deppe Together with Practical Advice on Questions of Technique*, p. 40.
[221] Vladivostok 1969, 'Schumann - Carnaval Op. 9 - Claudio Arrau, piano (1961)', YouTube, 1 May 2016 <https://www.youtube.com/watch?v=fSG1CTVD4fo> [accessed 12 November 2024]
[222] Victoria von Arx, *Piano Lessons with Claudio Arrau: A Guide to His Philosophy and Techniques* (Oxford University Press, Incorporated, 2014), p. 112 <http://ebookcentral.proquest.com/lib/nuim/detail.action?docID=1688434> [accessed 2 February 2023].

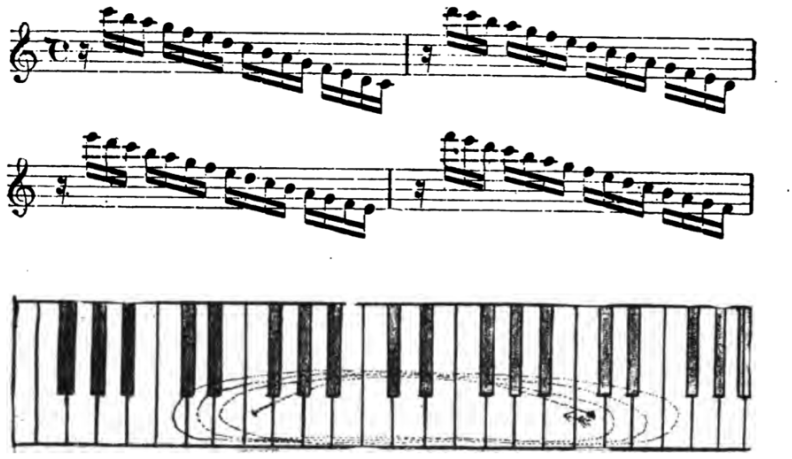


Figure 3.17. Scalic passages with the path for the circular movements of the hand.
Taken from Artistic Piano Playing by Caland, p. 38 (New York, G. Schirmer, 1903).

> I started the highest note with a normal position, slowly lifting the wrist up when descending, then slowly lowering the wrist as it reaches the lowest note as it requires using the thumb. I then moved the hand in a lower position to the next high note again to repeat the movement. While it was not mentioned in Caland's book, this movement reminds me of the phrasing of the music. The arc shows the phrase of the music by using the curvilinear movements. Although it is not as free as the circular movement we use today, it can be seen as a start or beginning of a similar concept.

As Caland also mentioned that large leaps can be played in *legato* by 'carrying the hand, in a graceful semi-circle',[223] and that wrist movements would also always produce a rounded arc in playing, and not just for throwing the hand up and down,[224] I also tried to apply Deppe's technique with curvilinear movements in the following phrase (see Figure 3.18.), that is more complicated and with larger

[223] Caland, *Artistic Piano Playing as Taught by Ludwig Deppe Together with Practical Advice on Questions of Technique*, p. 53.
[224] Ibid., p. 52.

intervals, in a practice session on 8th Dec 2022 where I observed the hand movements and wrote:



Figure 3.18. Chopin's *Grande Polonaise Brillante* bars 101 to 102.
(Copyright 1998 G.Henle Verlag, München)

When playing the right hand part of bars 101 to 102 of Chopin's *Grande Polonaise Brillante* Op. 22 with my own techniques (see Figure 3.18.), I did not think of the movements, therefore, the wrist and hand would move up and down to complement the larger intervals and to make sure the notes were connected. As the performer, my visual perspective when playing this phrase focused on following the fingers as the notes ascends and descends when playing and did not think much about other hand parts. However, we should remember that Caland mentioned Deppe's words in her book, that '[t]he binding of tones should be in the hand itself'.[225] Therefore, I connect the notes by using the hand, and considered the curvilinear movements. Attempting to play the first note with an elevated wrist and perform the beginning of curvilinear movements during the first three notes (just as how Deppe

[225] Caland, *Artistic Piano Playing as Taught by Ludwig Deppe Together with Practical Advice on Questions of Technique*, p. 35.

described we should do for playing an ascending scale)[226] was possible, but to maintain the hand at the regulation position where hand provides a rapport to the arm can be more difficult for someone who is used to extending the elbow. When applying Deppe's technique, instead of connecting the notes by fingertips, I needed to ensure the arm moves as one with the hand so that I do not focus on just the fingers. In fact, using the arm would help the hand to better maintain the regulation position and encourage the fingers to be less stretched out, especially at the turning of the thumb under the hand. With Deppe's techniques, it makes the expansion and contraction of the hand quicker, and the hand would look quieter without too many movements of leaning in and out of the keyboard.

This reflection log shows two different ways of connecting the notes — one using the fingers while allowing arm movements function naturally, and the other using the arm. The first few sentences described the playing of the right-hand semiquaver line of bars 101 and 102 with the focus of using the fingers, while the later parts were my attempts at connecting the notes using the hand, rather than focusing on the fingers when playing. The attempt also demonstrated how Deppe's hand position, use of arm and hand, and his suggested curvilinear movements go together.

Deppe's suggestion of using the hand and arm has progressed into a new realm of playing compared to his predecessors. Yet, it is still quite different from my own techniques as the use of arm was incorporated to a different extent in Deppe's technique. Furthermore, despite introducing the use of the arm, there were some

[226] Caland, *Artistic Piano Playing as Taught by Ludwig Deppe Together with Practical Advice on Questions of Technique*, pp. 34–35.

instructions, such as the placement of the elbow in Deppe' playing approaches, that would cause restrictions to the hand movements as well.

However, it was realised through the examples above that, in putting together Deppe's postures and initial instructions for practical use, integrating them into a set of cohesive movements, and the coarticulation of all parts of the hand is required. While the instruction for each part of the hand was explained individually, they influence and interact with each other. Piecing together the specific roles of each hand part in constructing Deppe's desired curvilinear movement, the whole 'gestalt' helps us understand the interplay between them. Therefore, the coarticulation of all the hand and body parts ensures that the application of Deppe's techniques becomes a full experience.

3.5 Comparison of Techniques

	J. N. Hummel	Carl Czerny	Theodore Leschetizky	Ludwig Deppe
Seat	• Opposite the middle of the keyboard, about 6-10 inches away. • Not too high nor too low.	• At a distance, exactly opposite the middle of the keyboard. • At a height where ends of the elbows are about an inch higher than key surface.	• At a distance where arms can be easily bent, fingertips rest on the keys, and feet reach pedals. • Seating: Not too low, to avoid raising one's shoulder (Brée), but not too high to enable low wrist position. (Prentner)	• Low seat, sufficient that the forearms form an ascending line from the elbows, which are lower than white keys.
Back	• Upright, without bending forward or sideways.	• Upright chest, a little inclined towards keyboard.	• Unconstrained and erect	• No mention of position, but rather the use of back and shoulder muscles in playing to sustain and carry the weight of arm.
Arm	• -	• Not pressed against or away of the body • Maintain tranquil arms. • Forearm (elbow to finger knuckles) should form a straight horizontal line.	• Raised only in specific cases such as playing portamento, or loud successive chords.	• The hand is carried by the arm.
Elbow	• Turned towards the body, but without pressing it.	• Hang down freely about 4 inches nearer to the keys than the shoulders.	• Elbows are positioned the same height, or a little higher than the keys. • Not too close or too far from the sides.	• Positioned below the white keys. • As close to the body as possible but without being forced. • Elbow to be like lead.
Wrist	• -	• Wrists not bent upwards or downwards.	• Wrist held lower than the knuckles.	• Elevated; held higher than the back of hand. • Hand hangs loosely from the wrist.
Hand	• Hand turned outwards. • Rounded position.	• Avoid oblique hand position. • knuckles form a semicircle.	• Upward rounded hand.	• Must be freed from the weight of the arm. • Carried and supported by arm and shoulder muscles. • Light as feather. • The outside of the hand should form a straight line with the forearm.
Fingers	• Bent finger joints. • Thumb bent and inclined towards second finger. • Form a horizontal line between thumb and little finger.	• Bent fingers inwardly. • All fingertips and thumb may form a straight line. • Upwards or Downwards movements.	• Curved fingers with tip-joint vertically falling on the keys. • Fingers should be positioned near the front edge of the keys, but not the very edge.	• Fingers should fall onto keys instead of striking.
Movements	• Avoid violent movements of the elbow and hand. • Avoid lifting fingers too high. • Quickness of motion lies in the joint of fingers.	• Avoid unnecessary and useless gestures. • Strike fingers perpendicularly. • Graceful movements are necessary, but the excess must be avoided.	• Practice the raising and lowering of wrists but does not raise higher than original position. • Raise and lower the hand to avoid stiffness.	• Eliminate doubled or incoherent movements. • Simple and rounded hand and arm movements. • Laterally circular movements of the hand.

Table 3.1 Comparison of Selected Techniques.

Although Table 3.1 only includes the four treatises focused on in this research, the summary of these techniques shows an overall progress from a finger-focused technical approach to a broader exploration of techniques that involve other parts of the arms such as the wrists, elbows, and hands. While each pedagogue has their personal preferences and methods that they recognize and regard as optimal, the comparison also demonstrated a tendency towards diversity in technical approaches, challenging previously established limits and boundaries, and going beyond older techniques.

Although C. P. E. Bach's treatise was written in the mid-eighteenth century and Hummel's at the beginning of the nineteenth century, they showed many similarities. Hummel explains Classical playing approaches and techniques in further detail, in addition to providing examples and studies. While not all instructions were identical, they convey a similar idea, with some differences in their fingering choices. On the other hand, Czerny, who studied under Beethoven and published a treatise a little over a decade later than Hummel's, showed differences in a few areas such as elbow position and finger movements. Near the end of nineteenth century, the techniques of Leschetizky and Deppe, can be observed to be freer from the previously restricted movements and postures.

3.5.1 Seating

While Hummel's and Czerny's treatises from the first half of the nineteenth century mentioned sitting at the middle of the keyboard, in order to reach the highest and lowest key easily, seat height became the aspect that helps the pianist implement Deppe and Leschetizky's techniques. Hummel mentioned that one's sitting distance

from the keyboard should be around 6-10 inches and that one should not sit too high or too low, implying that everyone should adjust the chair to a suitable height. Czerny on the other hand gave instruction on seating distance and height using relative elbow and shoulder position. Although he did not state the exact distance of the body, he noted that one should sit at a distance with the elbows being four inches closer to the keys than the shoulders.[227] This gave the readers a clearer indication that they should place their hands forward, instead of keeping the elbows at the same distance as the body. Czerny noted that at the correct seat height, the end of one's elbows would be about one inch higher than the key surface, which showed a similarity with C. P. E. Bach's treatise who indicated that one is sitting at the correct height when their forearms are slightly hanging above the keyboard.[228] Deppe and Leschetizky, on the other hand, required a seat height that suits the needs of their respective techniques in sustaining arm weight and to enable the use of wrists.

Chair height is a personal aspect where each pedagogue has their own preference. Among the researched techniques, the low seat instruction by Deppe stood out. For example, Fay stated that she preferred a low seat and cut off two inches off her piano chair.[229] According to the Museum of Johann Nepomuk Hummel at Bratislava, in a room with his pianoforte, the chair used to match his piano was a non-adjustable square stool.[230] At Stiftung Mozarteum Salzburg, where Mozart's Birthplace was reconstructed with period furniture, it could be seen in the Historical

[227] Czerny, *Complete Theoretical and Practical Pianoforte School, Op500*, I, p. 2.
[228] Carl Philipp Emanuel Bach, *Essay on the True Art of Playing Keyboard Instruments*, trans. by William J Mitchell (W.W. Norton, 1949), p. 42 <https://archive.org/details/BACHCarlPhilippeEmanuel.EssayOnTheTrueArtOfPlayingKeyboardInstruments/mode/2up>.
[229] Fay, *Music Study in Germany*, p. 293.
[230] 'Múzeum Mesta Bratislavy' <http://mmb.pano3d.eu> [accessed 4 March 2021].

Room that the chair used for the piano was just another chair available at home.[231] Furthermore, according to the painting of Beethoven on the piano by Carl Bernhard Schlösser, the chair used was not a 'proper' piano chair or stool but one with arm rests.[232]

Nevertheless, a chair's height would be distinctive to each individual's height and body proportion, and the relationship between seat distance and height could be adjusted depending on the different body, height, and other aspects of each individual. As each person has a unique body, for instance, some individuals have longer torsos than others, even if the height of the chair was specified, it may not be the same for everyone. Each pianist or pedagogue will also have their own personal preference of seat height that matches their playing styles and techniques. For example, the low seat by Deppe mentioned in this chapter was very much linked to his techniques. To give two contrasting examples in a more modern context, Glenn Gould would sit at a low height while Arthur Rubinstein was said to be 'almost standing up'.[233] To further highlight the individuality of a pianist and their seat, the late Shura Cherkassky spent twenty minutes trying out different stools when he could choose the piano he preferred in five minutes.[234]

As Czerny, Leschetizky, and Deppe used the position of elbows and hands to pinpoint the height of seat and gave an overall picture of one's seating position, the

[231] 'Mozarteum' <https://mozarteum.at/en/museums/mozarts-birthplace/#virtual-tour-mozarts-birthplace> [accessed 4 March 2021].
[232] Carl Schlösser, *Beethoven in His Study*, c. 1860–1900, The New York Public Library Digital Collections <https://digitalcollections.nypl.org/items/510d47db-cbec-a3d9-e040-e00a18064a99> [accessed 13 November 2024].
[233] Charles Rosen, *Piano Notes: The World of the Pianist* (Free Press, 2002), p. 18.
[234] Ibid., p. 18.

information provided for how the body should be placed in relation to the piano was more useful to this research, providing us a rough idea of how high or low one's seat needs to be in order to recreate their preferred height. Through some exploration, sitting at different heights would be an initial point that might enable different hand and arm movements, affecting the techniques used, and even result in different playing tones.

3.5.2 Upright Posture and Limited Movements of the Body

While Hummel noted that a pianist needs to sit in an upright position without bending forward or sideways,[235] Czerny mentioned that one should also incline a little towards the keyboard.[236] This upright and straight body posture, although in line with modern sitting posture guidelines where slouching is not recommended,[237] might have been influenced by the aesthetic value of the nineteenth century as well. In connecting the upright posture with historical attires, according to the Victoria and Albert Museum, in the early-eighteenth century, the women's body shape is achieved by wearing corsets that are made of linen and stiffened by whale bones, and the back was laced down tightly to create an upright posture of the torso. A piece of metal or wood was also sometimes incorporated into the front.[238] Some eighteenth century women's corsets that were worn below the natural waistline, limit movements and can also be seen as a sign of restricted mobility.[239] While corsets were lightly boned

[235] Hummel, *A Complete Theoretical and Practical Course of Instructions on the Art of Playing the Piano Forte,* I, p. 3.
[236] Czerny, *Complete Theoretical and Practical Pianoforte School, Op500*, I, p. 1.
[237] Jennifer Pynt, Joy Higgs, and Martin Mackey, 'Seeking the Optimal Posture of the Seated Lumbar Spine', *Physiotherapy Theory and Practice*, 17 (2009), pp. 5–21, doi:10.1080/09593980151143228.
[238] 'Introduction to 18th-Century Fashion', *Victoria and Albert Museum*, 2013 <http://www.vam.ac.uk/content/articles/i/introduction-to-18th-century-fashion/> [accessed 4 March 2021].
[239] Oriole Cullen, 'Eighteenth-Century European Dress', *The Met's Heilbrunn Timeline of Art History*, 2003 <https://www.metmuseum.org/toah/hd/eudr/hd_eudr.htm> [accessed 4 March 2021].

and quilted in the early nineteenth century, they continued to be worn to round the bust, held the waist and stomach in, and shape the hips.[240] It was also noted that fashionable men in the early-nineteenth century also started wearing boned corsets to achieve small waists and also jackets that were fitted at the upper chest.[241] One can immediately envision the resulting restricted movements, and the upright posture required when corsets were worn or when a piece of metal or wood is incorporated into the costume. The resulting posture was in line with Hummel's instruction of holding the back upright and not leaning sideways or forward, which could have made a significant contribution to the back posture of the time.

Czerny's recommendation of inclining the back a little, on the other hand, might correspond with the firmer tone that was frequently mentioned in his treatise. The slight inclination of the back showed subtle similarities to the concept of using arm weight in modern times. Czerny encouraged beginners to play with moderately strong tone to produce a firm touch,[242] he mentioned placing all the weight of the hand onto the finger that is playing, playing simple melodies using 'internal pressure',[243] as well as applying pressure to produce effective *crescendo*s.[244] While he told readers to use internal pressure and weight to achieve stronger sound, he cautioned that one must be careful not to degenerate them into mere thumps. The slight inclination of the back might be to help the pianist in the exertion of energy in these cases and avoid thumping the piano.

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[240] 'Corsets, Crinolines and Bustles: Fashionable Victorian Underwear', *Victoria and Albert Museum* <https://www.vam.ac.uk/articles/corsets-crinolines-and-bustles-fashionable-victorian-underwear> [accessed 6 February 2024].
[241] 'Introduction to 19th-Century Fashion', *Victoria and Albert Museum*, 2013 <http://www.vam.ac.uk/content/articles/i/introduction-to-19th-century-fashion/> [accessed 4 March 2021].
[242] Czerny, *Complete Theoretical and Practical Pianoforte School, Op500*, I, p. 7.
[243] Czerny, *Complete Theoretical and Practical Pianoforte School, Op500*, III, p. 39 .
[244] Ibid., p. 15.

While upright postures were not precisely stated in Leschetizky's techniques, Brée opened the book using one of Leschetizky's remarks, comparing the upright back to a horseman as quoted below.

> Sit at the piano unconstrained and erect, like a good horseman on his horse, and yield to the movements of the arms as far as necessary, as the rider yields to the movements of his horse.[245]

As for Deppe, while he mentioned using the back and shoulder muscles instead of the back position, his low seating position would leave one to sit rather upright. Therefore, sitting upright seemed to be one of the common instructions in all four treatises.

3.5.3 Arm, Elbow, Hand, Wrist, and Finger Movements

These four pedagogues were rather meticulous when it came to the placement of the elbows. The most distinctive elbow and hand placement would be that of Hummel's where the wrist is to be turned outward and the elbow towards the body. When playing with these hand positions, where the elbow became a passive pivot point, it was easier to move horizontally on the plane of the keyboard; and when playing in a fixed direction, especially when the right hand is going higher and the left is going lower, the fingers can be seen leading the melody. Contrastingly, Czerny did not mention outwardly turned wrists or elbows, but rather encouraged pupils to hang

[245] Brée, *The Groundwork of the Leschetizky Method*, p. 1.

their arms naturally without pressing against the body nor extending it out.[246] Czerny's arms and elbow placement enabled me to more easily produce a firmer tone through the fingers as they were slightly more similar to what I am used to. Turning the elbows inwards not only restrict the movements of the hand, but also restricted the flow of energy causing one's hands and fingers to feel quite weak. On the other hand, natural hanging arms made it easier to exert energy from the finger knuckles when striking keys, and even more so with the back inclined forward. Czerny's techniques provided examples where slight movements of arms and hands were allowed. For example, in playing the highest or lowest octave, big leaps and *marcato*, the arms and elbows were allowed to have slight movements. He followed the more conservative movements of the tranquil hand but also showed flexibility and more freedom in playing to achieve the desired tone, and to overcome technicalities such as leaps and playing at the extreme octaves. Thus, his instructions were not as movement-restricted as Hummel's treatise. Although Hummel and Czerny had different approaches, they encouraged using the fingers more than other parts of the hand.

However, things are different for Deppe and Leschetizky. While the use of the arm was not mentioned significantly and extending the elbows too much or jerking them was still frowned upon, the elbows were still encouraged to be placed near the body. The movements of the arm were partly related to other parts of the hand and did not function on their own. For example, Brée noted that the arm follows the movement of the hand in playing scales, gliding along the keyboard evenly and

[246] Czerny, *Complete Theoretical and Practical Pianoforte School, Op500*, I, p. 2.

horizontally.[247] As for Deppe, the arm has the role of supporting the hand and was guided in practicing the feather-light hand technique. [248]

Unlike Czerny and Hummel, Deppe and Leschetizky's techniques involved the use of wrist, straying away from finger technique, which directly affected their hand positions as well. My first impression when reading about the use of wrist was that it was closer to my techniques. However, Deppe's hand position of turning the outer hand outwards and Leschetizky's low wrist posture proved otherwise, not to mention the movements that accompany these postures. Practising these wrist movements has revealed movements that I was not used to, employing their hand positions and activating new parts of my hands in piano playing, breaking new grounds that were not present in my own techniques.

3.5.4 Finger Movement

Hummel's guidance to have quiet and narrow hand movements, not lifting the hands and not lifting the fingers too high can be said to be comparable to Bach's statement that 'the motion of one's hands is barely noticeable'.[249] Czerny, similar to Bach and Hummel, cared very much for tranquil arms, but made no mention of quiet fingers. Instead, he noted that all fingers should be lifted up to the same height to avoid delays.[250] While Hummel stated that the 'quickness of motion lies in the finger joints, without lifting too high',[251] Czerny described a more perpendicular action of the

[247] Brée, *The Groundwork of the Leschetizky Method,* p. 18.
[248] Caland, *Artistic Piano Playing as Taught by Ludwig Deppe Together with Practical Advice on Questions of Technique*, pp. 22–26.
[249] Bach, *Essay on the True Art of Playing Keyboard Instruments*, pp. 42–43.
[250] Czerny, *Complete Theoretical and Practical Pianoforte School, Op500*, I, p. 7.
[251] Hummel, *A Complete Theoretical and Practical Course of Instructions on the Art of Playing the Piano Forte,* I, p. 4.

fingers.[252] He also mentioned that in using a non-oblique hand position, the fingers 'may freely and independently make the necessary movement upwards or downwards' using the fingertip of curved fingers.[253] Czerny's instruction of perpendicular striking, straight arm, curved fingers and knuckles in the form of a semicircle, leads to the use of the main knuckles when pressing down keys. This could be one reason why quiet movements in fingers were not mentioned in Czerny's treatise, although he mentioned that they should not be lifted too high.[254] In order to ensure the perpendicular movement of the fingers, Czerny further noted that when using a wider section of the keyboard, the upper body must incline sideways to maintain straightness of the arm, as an oblique hand would affect the perpendicular striking of keys.[255] This showed that Czerny's main priority was to maintain the position of the arms and perpendicular striking fingers, and that he was willing to make some compromise on body movements and the elbows to achieve this. This was quite different from Hummel's instructions of 'right hand may conveniently reach the highest, and left hand the lowest keys, without altering the position of the body'.[256]

With the different postures and movements, these pedagogues were able to produce a variety of different touches. Hummel's words that 'quickness of motion lies in the finger joints' together with Kobb's reconstruction of the Viennese techniques[257] suggest that keys are to be played by moving the first joint of the

[252] Czerny, *Complete Theoretical and Practical Pianoforte School, Op500*, I, p. 54.
[253] Ibid., p. 2.
[254] Czerny, *Letters to a Young Lady*, p. 12.
[255] Czerny, *Complete Theoretical and Practical Pianoforte School, Op500*, I, p. 54.
[256] Hummel, *A Complete Theoretical and Practical Course of Instructions on the Art of Playing the Piano Fort*e, p. 2.
[257] Kobb, 'Viennese Piano Technique of the 1820s and Implications for Today's Pianists'.

fingers, which produces a light playing as it only uses a small part of the finger. In playing *staccato* touches, Hummel noted that one's fingers must be 'hurried away' to achieve a pleasing light *staccato*, hinting at finger techniques using finger joints. However, Leschetizky progressed onto other approaches of playing *staccato*s. He mentioned that the wrist *staccato* where one's hand would bounce back, creating a *staccato* that departed from the wrist, would produce what he called a lifted tone. These different ways of playing informed myself as a pianist, and could, in the future, inform modern pianists with many more possibilities. While some outcomes may be similar on a modern piano, each approach was formed through different perspectives, experiences, and intentions.

3.5.5 Tone and Touch

As for touch and tone, some distinction in Czerny's employment and preference of tone stood out among the older treatises. Bach always asked for relaxed movement, muscles without stiffness, and Hummel always emphasized avoiding heavy playing. These playing styles — relaxed, and light — would lead to a somewhat similar result in terms of piano tone. When a pianist stiffens his arms and hands, the sound produced will be louder and heavier. Czerny, on the other hand, preferred a firm tone, and explained how to apply pressure and weight onto a key, advising beginners to go for a moderately loud playing in order to achieve a firm tone.[258] His notion of perpendicular fingers clashes with Hummel's concept of touch. While Czerny often reminds the reader to not degenerate a tone into mere thump in his treatise, he recommended striking the same key several times using the same finger as practice

[258] Czerny, *Complete Theoretical and Practical Pianoforte School, Op500*, I, p. 7.

to ensure the tone is pressed down firmly.[259] Although Czerny's posture of the body and hand was not too far off from Hummel's, the tone he produced in his playing style was different. While the playing mechanism used in Hummel's treatise all lie in the joints of the fingers, Czerny's hand posture made possible the perpendicular striking of the fingers and focused on the base knuckle rather than the finger joint.

Following Hummel's treatise, which emphasized the use of finger joints, it was harder to press down keys on a modern grand piano. When employing this finger technique, the weight and depth of the key also forced the upper knuckle to move and assist the smaller finger joint. As the smaller joints were less sufficient in handling the heavy action of the modern grand piano, this technique in turn resulted in a thinner, lighter, and shallower touch. As for Czerny's finger technique, where fingers are to strike perpendicularly, it uses the main knuckle of the fingers, making the striking of keys more powerful.

Deppe and Leschetizky, having departed from finger technique, employed mainly the wrist and even the back and shoulder muscles for their desired tone colour. Deppe used his unique feather-light hand technique to create his so called 'poetic' tones. Fay mentioned that his technique created a 'fuller, less loud and more penetrating sound', which she recalled may be similar to Liszt's techniques.[260] Leschetizky on the other hand mainly uses wrists especially in playing *cantilena* melodies as reinforcements to the finger touch in order to bring out a strong and full *legato* tone.

[259] Ibid.
[260] Fay, *Music Study in Germany*, p. 288.

In short, a major change in trend from using mainly the fingers to the employment of larger hand parts such as wrist, shoulder, or the back can be seen between early- and late-nineteenth century, even though the four selected pedagogues have their own set of approaches in piano playing. In saying this, these techniques may not represent the general public of the nineteenth century, but rather an investigative study into the playing styles and techniques of the selected pedagogues. The changes in techniques in the nineteenth century developed alongside the advancement of instruments, for example, transitioning from wooden frames and light Viennese action to heavier mechanisms with larger hammers, iron frames, increased string tension, and innovations such as Erard's escapement action. Together, they demonstrated the change in playing styles and techniques; some of the techniques were passed down into the late-nineteenth century during the evolution, while new concepts emerged at the same time. Although these techniques progressed gradually, using more parts of the hand, a freer body, and tackling different tones, they are still unlike the techniques that I am currently using or those that we see in concert halls today, aesthetically, technically, and visually. While this chapter only discussed these techniques in words, and only employed them in an exploratory form, the next chapter will apply these techniques on appropriate pieces using several musical examples.

Chapter 4 Application and Embodiment of the Selected Nineteenth-Century Techniques

In learning piano, students sometimes learn by mimicking the way their teachers play or demonstrate a piece. While this could help students get a rough idea of how it should be done and how it might sound musically, according to Carola Grindea, issues in a teacher's playing can be easily passed onto the student and students may also imitate their teacher's habit without being able to discern if a habit is good or bad.[1] If a student couldn't tell right from wrong, it may also be possible that the student would not fully understand the rationale behind each teaching or instruction taught to them. However, with the available instructions on the correct and incorrect approaches in re-imagining the researched techniques, it is hoped that this chapter help contextualise the use and effects of these researched techniques through the process of application and embodiment, just as Youn Kim stated:

> The hands or arms do not make pianists great, but they are rather the mechanisms that control complicated movements in the central nervous system. A pianist should seek to 'consciously' understand these physical movements.[2]

According to Werner Goebl, the main purpose of body movements in piano playing, apart from producing sounds, is for the creation of sounds to be perceived

[1] Carola Grindea, *Great Pianists and Pedagogues: in conversation with Carola Grindea* (Kahn & Averill, 2007), cited in Therese Elaine Milanovic, 'Learning and Teaching Healthy Piano Technique: Training as an Instructor in the Taubman Approach', (unpublished doctoral thesis, Griffith University, 2012), p. 63 <https://research-repository.griffith.edu.au/items/5a9e31b4-b524-54ec-ba03-1f6d45e9088f>.
[2] Youn Kim, *Body and Force in Music: Metaphoric Constructions in Music Psychology* (Routledge, 2023), p. 63, doi: 10.4324/9781003056201.

by the audience, or as a communication tool between musicians and the audience.[3] Therefore, the following sections compare the resulting movements from using my own techniques and historical techniques, mainly focusing on sound-producing and sound-facilitating gestures[4] in piano playing. Prior to the study, playing approaches, distinct techniques or postures were identified, applied, and examined. These techniques were then learnt to the best of my ability and used as a departing point to observe their effects on the movements of a pianist. The postures and techniques may not only be unfamiliar to modern pianists today, but they also lead to different movements. By applying the techniques, hand and body positions, and playing approaches as instructed, we can observe how the historical techniques differ from my own techniques. As explained in Chapter 1.1 ,'historical techniques' refer to the researched techniques from the nineteenth century, 'my own techniques' in the following texts refer to the current techniques used by the performer (myself). In the years of developing my own techniques, I was taught to use all parts of the body in playing, ranging from seating posture and feet placement for optimal support, to the application of each body part. One of the most important approaches I have acquired in piano playing that is different from these researched historical techniques is the use of the arm and back as well as a relaxed hand that is unconstrained in playing. My technique emphasises the transfer of weight from the larger muscle groups of the arm and back into the hands and fingertips, allowing greater force when needed, better control, and freer movements. The interplay between different hand and body

[3] Werner Goebl, 'Movement and Touch in Piano Performance', in *Handbook of Human Motion*, ed. by Bertram Müller and Sebastian Wolf (Springer, 2017), pp. 1–18 (p. 2), doi:10.1007/978-3-319-30808-1_109-1.

[4] Sound producing gestures are the gestures used in producing sound, while sound facilitating gestures provide support to sound producing gestures. While the latter do not directly create sound, they are crucial in shaping the sound produced. For example, preparatory movements before playing, or phrasing gestures that are related to musical phrasings. See Alexander Jensenius and others, 'Musical gestures: Concepts and methods in research' in *Musical gestures: Sound, movement, and meaning,* ed. by Rolf Inge Godøy and Marc Leman (Routledge, 2010), pp. 12–35, doi:10.4324/9780203863411.

parts, as well as the degree of force used would depend on the sound I seek in playing different pieces. This practice remains integral to my approach at the piano to this day and are also demonstrated in the examples below.

It is hypothesized that differences in techniques would require adjustments to our postures and movements. The hand movements, in particular, are the main product of the techniques and approaches applied by the performer, and they may also further contribute to differences in the sound produced. To supplement the exploration, video footage taken from two different angles and finger focused recordings will be included. The video footage was then processed into motion paths to showcase the differences between movements from my own and historical techniques. To provide more consistent results, each of the musical excerpts were recorded three times, and the tracked motions were then averaged.

The graphs with motion paths provide visual representations of the movements, allowing us to observe how the elbows and wrists move in playing, and present us with a way to analyse and compare them, even post performance. Instead of the profile view that we normally present to the audience in a performance, which can obstruct the view of the hands, the motion paths give a frontal view of the hands — from the perspective of the piano towards the pianist. These motion paths are representations of the actual movements where the movements of the elbow or wrist joints from both my own and historical techniques are represented using a different colour for a clearer comparison. Additionally, the movements of my own techniques were plotted using dots, while movements of historical techniques were plotted using crosses, allowing us to follow the paths and differentiate them more easily. While it would only be possible for us to see the starting and ending points of the movements

through the attached recordings, the motion paths show the size, smoothness, relative speed, and trace of the elbows and wrists, allowing the examination of both apparent and subtle differences, as well as the physical and technical differences between the movements from each technique. For instance, the difference in sizes conveys the efficiency of a movement, the difference in location suggests the difference in posture such as the wrist or the elbow position, and the gap between plotted points indicate the relative speed of the particular action, where the larger gap equates to faster movement.

Furthermore, this chapter includes reflection logs that were recorded immediately after each practice session. By consciously applying and experimenting with the techniques on the modern piano, I gained understanding, thoughts, and insights from these practice sessions. Therefore, the reflection logs included would provide snapshots of my thoughts as a performer, and also inputs of the embodiment process. Furthermore, other aspects such as a technique's effects on the sound production, practical experiences, kinaesthetic engagement, and functionality along with their strengths and limitations were also recorded, further nourishing the performer's perspective in this case.

4.1 J. N. Hummel

Among Hummel's techniques, his instructions of using:

1. Inwardly turned elbows (acting as passive point or pivot)
2. Hand turned outwards
3. Finger motion: mainly using finger joints
4. *Staccato* touch executed with a light inward finger motion toward oneself (hurried away movements).

will be studied using musical excerpts from the first movement of Mozart's Sonata in D major, K576 as established at the end of Chapter 2.3.3 and Hummel's Fantasina Op. 124.

Hummel's Fantasina Op. 124 is based on themes From Mozart's *Le Nozze di Figaro*. It is comprised of different variations presenting sections with different tempi marking, while also involving materials with various textures and articulations. As elements in this piece require different techniques, it makes sense to study how the techniques (historical and of my own) react in different sections.

On the other hand, the first movement of the Mozart Sonata is characterised by its rather contrapuntal compositional style. The opening of the sonata has a 'hunting' theme played in unison,[5] and is later played by the left hand from bars 8–15. Furthermore, canonic phrases occured a number of times, for instance, in bars 27–28, bars 63–65, bars 69–71, and from bars 137 as well. There is also frequent use of running semiquavers especially on the right hand. Therefore, it is a challenge to

[5] John Irving, *Mozart's Piano Sonatas: Contexts, Sources, Style* (Cambridge University Press, 1997), p. 88.

play with clarity that helps feature the contrapuntal lines and themes on different hands. Irving described some sections of the first movement as 'technically as taxing as anything in the concertos', and was believed to be for 'Mozart's own virtuosity'.[6] While it may not be possible to ascertain if these historical techniques pose as a solution to an easier approach at the exploratory stages of this research, the examples below demonstrate a brief overview of the differences between historical and modern techniques through musical excerpts on the modern piano.

[6] Irving, *Mozart's Piano Sonatas,* p. 87.

4.1.1 Fantasina Op. 124 by Hummel

Example 1. Bars 26 to 29 in Hummel's Fantasina Op. 124.



Figure 4.1. Bars 26 to 29 of Hummel's Fantasina Op. 124.
(Wilhelm Hansen, n.d.)

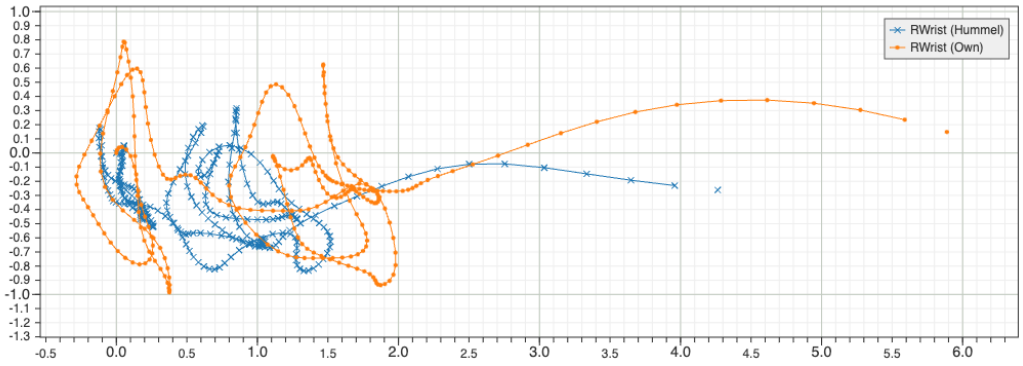


Figure 4.2. Bars 26 to 29 of Fantasina Op. 124, averaged comparison of the right wrist.

In playing Hummel's Fantasina, the main theme from bar 26 involves dotted rhythms, slurs and *staccato*, making it a suitable section to test the hurried away *staccato* finger movement. Unsurprisingly, we can observe a larger motion at the beginning when using my own techniques. This is because the wrist was lifted up and down, creating bounces to correspond to the slurs and *staccato* articulation in the right hand. The fingers used in playing the dotted rhythms were also employing slightly more up-down movements. Whereas for Hummel's technique, the wrist was generally fixed, with articulations such as *staccato*s and slurs done by moving the finger joints inward, creating a swift motion that aligns with Hummel's description — 'hurried away'. This technique requires flexibility and agility to produce a more

delicate and lighter touch, and when it is done in a quick manner, it produces a crisp and light *staccato* tone.

While this passage is supposed to be played softly, my technique applies a slight emphasis on the crotchet E note in bar 26 and the crotchet D note in bar 28; the crotchet notes were supported by the wrist and arm in a subtle manner. When following Hummel's instruction to engage more of the finger joints,[7] other parts of the hands exerted very minimal effort, which was naturally ensured through the facilitation of the outwardly turned hand and inward wrist position. When starting from this hand posture, fingers became the primary focus in playing the notes. This finger movement is demonstrated on the right-hand melody and can be seen in the link below.



Close-up finger movement (Hummel's instruction)

[7] Hummel stated that '(t)he quickness of motion lies only in the joints of the fingers, which should move with lightness and freedom, and not be lifted up too high from the keys', after highlighting that violent movements of the elbow and hands must be avoided to attain steadiness and certainty in playing. See Johann Nepomuk Hummel, *A Complete Theoretical and Practical Course of Instructions on the Art of Playing the Piano Forte,* 3 parts (T. Boosey, 1828), I, p. 3–4.

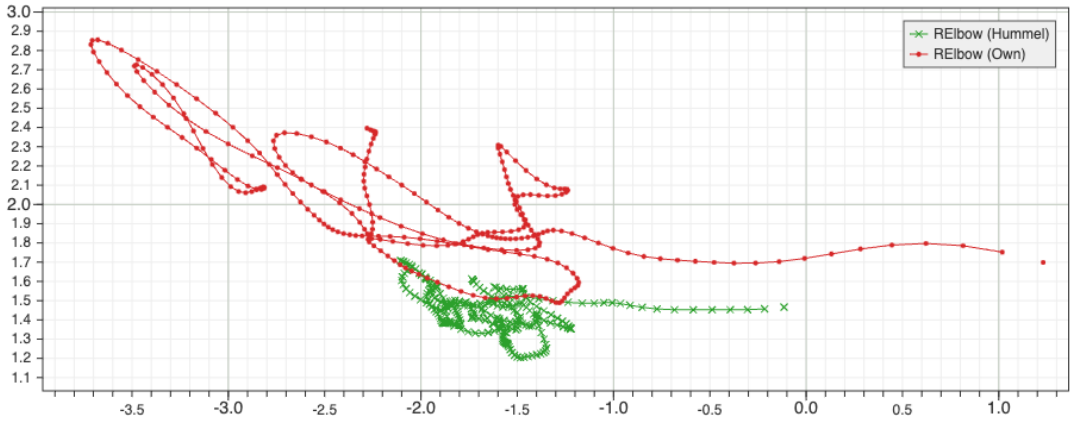


Figure 4.3. Bars 26 to 29 of Fantasina Op. 124, averaged comparison of right elbow.

In examining the motion paths of the elbow, Figure 4.3 shows how Hummel's technique created a flat and smaller scale motion as the elbow acted as a pivot point. In placing the elbow at a static point near the body, the overall body posture matches Hummel's instruction that the 'right hand may conveniently reach the highest, and the left hand the lowest keys, without altering the position of the body'.[8] This could be especially observed where the points of the elbow on the motion path are close together. Contrastingly, my technique produced bigger motions due to the outwardly extended right elbow when playing the slurs and *staccato*s in bars 26 and 28. As this example only consist of a few bars, its video recording for comparison between techniques is combined with the next example, presenting a continuous recording of bars 26 to 54.

[8] Johann Nepomuk Hummel, *A Complete Theoretical and Practical Course of Instructions on the Art of Playing the Piano Forte,* 3 parts (T. Boosey, 1828), I, p. 6 <https://urresearch.rochester.edu/institutionalPublicationPublicView.action?institutionalItemId=28625 > [accessed 2 March 2021].

Example 2. Bars 49 to 54 of Hummel's Fantasina Op. 124.



Figure 4.4. Bars 49 to 54 of Hummel's Fantasina Op. 124.
(Wilhelm Hansen, n.d.)

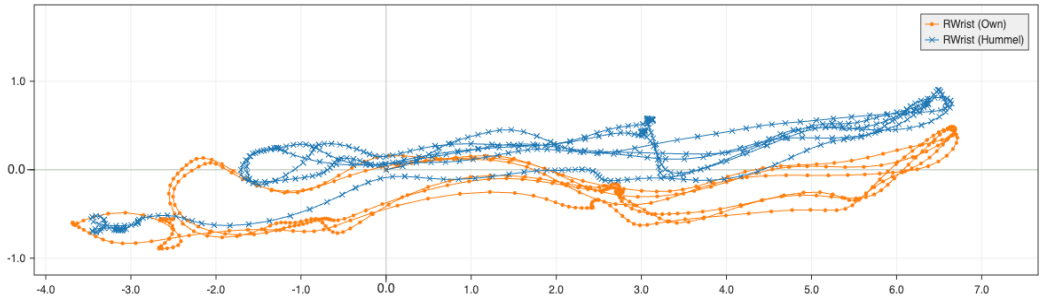


Figure 4.5. Bars 49 to 54 of Hummel's Fantasina Op. 124, averaged comparison of right wrist.

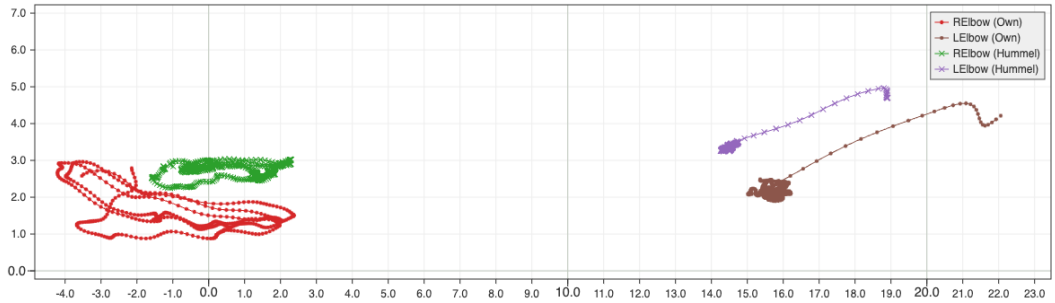


Figure 4.6. Bars 49 to 54 of Hummel's Fantasina Op. 124, averaged comparison of left and right elbow.

The right elbow in Figure 4.6 showed significantly larger movements when playing my own technique as it moves back and forth, following the hand. It extends outwards when moving in a descending direction, giving way for the hand to move

first. When playing running passages with Hummel's technique of the turned wrist and passive elbow, it was easy to play in an ascending manner with the fingers leading the motion. I believe that this hand position would be useful for melodic patterns where the right hand moves towards the right (higher registers) of the keyboard, and the left hand moves towards the left (lower registers) of the keyboard, generally moving outwards and away from the center. It would let the fingers lead the other parts of the hand. Also, in these situations, the elbow would be able to be more static as it does not need to move much other than acting as a pivot point for the upper arm. Therefore, it is also showed in this example that the elbow in using Hummel's techniques stayed in one place and only the hand moves horizontally up and down the keyboard.

While not commonly seen, the outwardly turned hand position advised by Hummel was said to be similar to Breithaupt's hand position where the right hand is turned to the right and the left hand to the left.[9] In trying this hand position, Strelchenko mentioned that:

> [it] makes the wrist free and increases the comfort (and speed!) in playing passages, double thirds and double sixths. It also gives the performer the opportunity to use an easier hand-rotation which increases the ability to continue playing the same technical element without the muscles becoming tired.[10]

[9] Natalia Strelchenko, 'Style Brillante: Piano technique in Performance Practice of early 19th century. Critical reflection', (unpublished research report, Norwegian Academy of Music, 2011), p. 87 <http://hdl.handle.net/11250/2560103> [accessed 15 November 2024].
[10] Strelchenko, 'Style Brillante: Piano technique in Performance Practice of early 19th century', p. 87.

I also agree with Strelchenko's comments that this hand position does help with playing thirds as I was able to produce them with better clarity using the outwardly turned wrist (listen to 0:12 when using Hummel's technique).

However, it was harder to play descending scalic passages on the right hand using the outwardly turned hand position as it is very different from how I used to play them. Using an outwardly turned wrist to play descending notes on the right hand is almost akin to walking backwards. The turned wrist would make turning of the fingers when descending difficult, and the weight of the hand constantly leaned towards the outer area of the hand due to its position, does not make playing it any easier. After trying the outwardly turned wrist position, I believe it is especially suited for specific phrases and fingerings such as those mentioned above, and that it may not be necessary to forcefully turn the wrist outward in playing sections that are not as suitable for this hand position.



Hummel – Fantasina Op. 124, bars 26–54 (Own Technique)



Hummel – Fantasina Op. 124, bars 26–54 (Hummel's Technique)

Example 3. Bars 106 to 109 of Hummel's Fantasina Op. 124.



Figure 4.7. Bars 106 to 111 of Hummel's Fantasina Op. 124. (Wilhelm Hansen, n.d.)

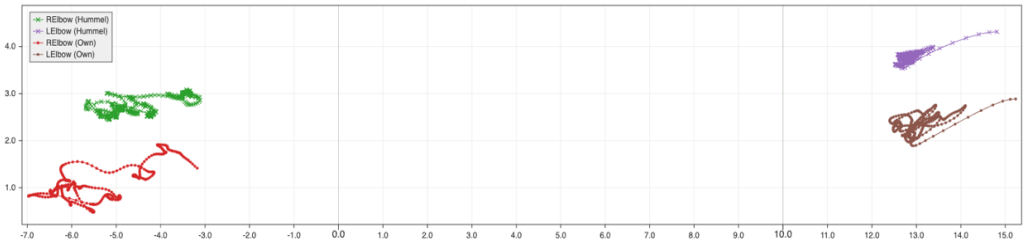


Figure 4.8. Bars 106 to 109 of Hummel's Fantasina Op. 124, averaged comparison of right and left elbows.

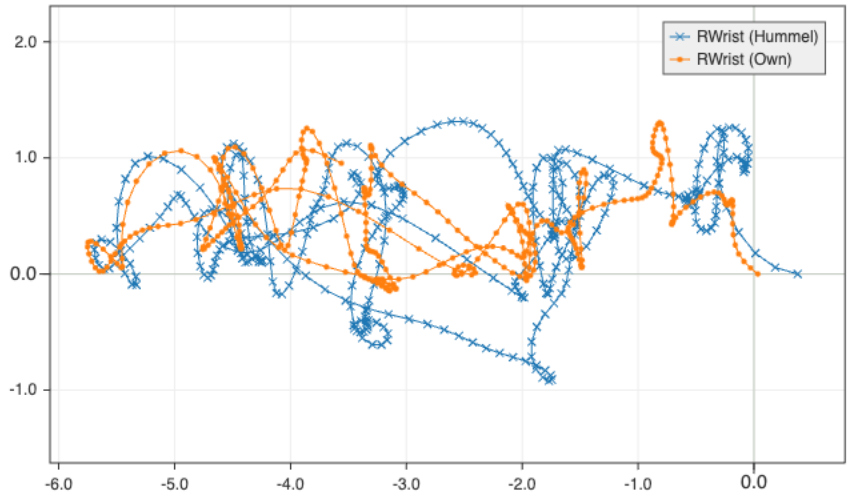


Figure 4.9. Bars 106 to 109 of Hummel's Fantasina Op. 124, averaged comparison of right wrist.

As expected, the elbow movements using my own techniques in this example were also larger than the movements using Hummel's techniques. However, my right

wrist movements using my own technique were slightly smaller. Hummel's posture of turning the wrist outwards impacted the chords in this section in terms of movement as well as sound. In this case, the outwardly turned position causes the weight to be placed on the outer side of the hand and made it easier to focus on the top note. This position naturally brings out the top line melody without large movements or deliberate attacks, presenting to us another function of the outwardly turned wrist. However, in using Hummel's techniques to play the F#-A-D-F# chord, the hand moved forward into the black keys, breaking away from the usual position where wrists were held slightly higher. This then caused a dip in the motion path that made it seem larger than my own technique. By listening to the two videos below, we can observe that Hummel's techniques created a version that was less harsh and slightly softer in terms of volume compared to using my own techniques. Similar with the observations in Example 2, using Hummel's techniques also resulted in a cleaner and more even execution of the quaver and semiquaver thirds in bars 107 and 109.



Hummel - Fantasina Op. 124, bars 106–109 (Own Technique)



Hummel - Fantasina Op. 124, bars 106–109 (Hummel’s Technique)

Example 4. Bars 123 to 128 of Hummel's Fantasina Op. 124.



Figure 4.10. Bars 121 to 131 of Hummel's Fantasina Op. 124.
(Wilhelm Hansen, n.d.)

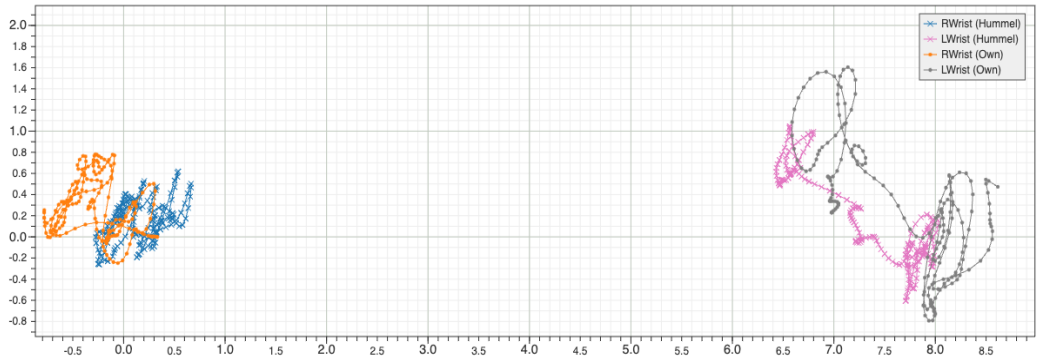


Figure 4.11. Bars 123 to 128 of Hummel's Fantasina Op. 124, averaged comparison of left and right wrist.

In the above example, both left and right wrist movements using my own techniques have larger movements compared to Hummel's techniques as a result of the *staccato* notes. Two different methods of showcasing the execution of *staccato* notes could be seen in this example — hand bounces using my own techniques and hurried-away movements by the fingers using Hummel's techniques. Hummel's technique was played by 'hurrying the fingers away from the keys lightly, in an

inward direction, and the hand not taken up at all'.[11] It provides a solution for *staccato* that does not require much movement from the wrist or arms.

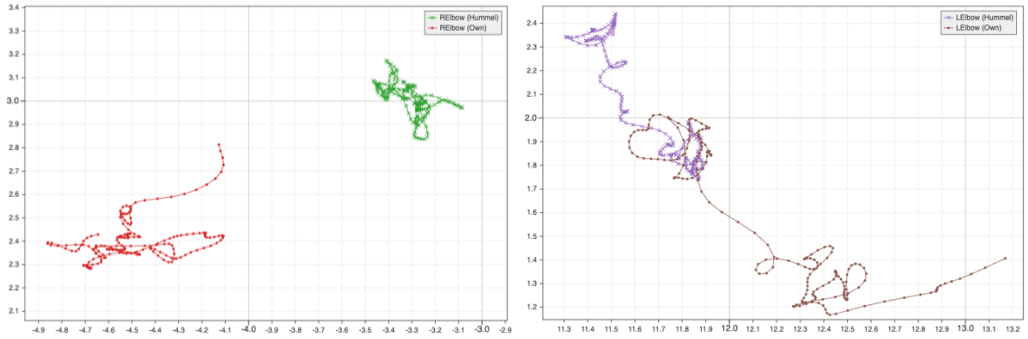


Figure 4.12. Bars 123 to 128 of Hummel's Fantasina Op. 124, averaged comparison of left and right elbows.

Incidentally, Hummel's techniques also produced quieter elbow movements. With a more static elbow, most of the sound was drawn out by fingers alone and therefore sounded lighter, while my own technique that involved the whole arm produced a slightly clearer sound. The staccato E4 notes in bars 123 and 124 were played using the thumb, and were therefore not suitable for Hummel's technique that required the motion of hurrying away from the keys. However, Hummel's technique was applied on bars 125 to 130. The difference in clarity was more noticeable in the sections that are circled in blue, and also in the unison section in bars 128 and 129. The videos below are also a combination of the two short excerpts from Example 4 and Example 5.

[11] Hummel, *A Complete Theoretical and Practical Course of Instructions on the Art of Playing the Piano Forte*, I, p. 65.



Hummel - Fantasina Op. 124, bars 123–145 (Own Technique)



Hummel - Fantasina Op. 124, bars 123–145 (Hummel’s Technique)

Example 5. Bars 138 to 145 of Hummel's Fantasina Op. 124.



Figure 4.13. Bars 138 to 148 of Hummel's Fantasina Op. 124. (Wilhelm Hansen, n.d.)

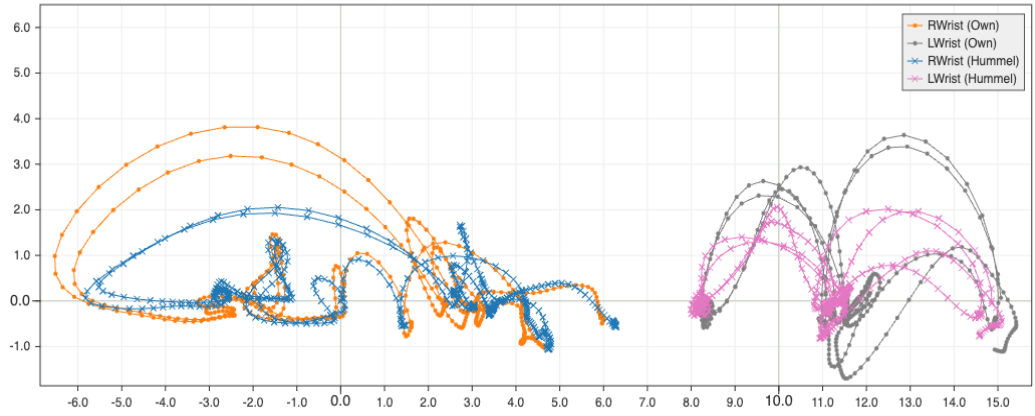


Figure 4.14. Bars 138 to 145 of Hummel's Fantasina Op. 124, averaged comparison of left and right wrists.

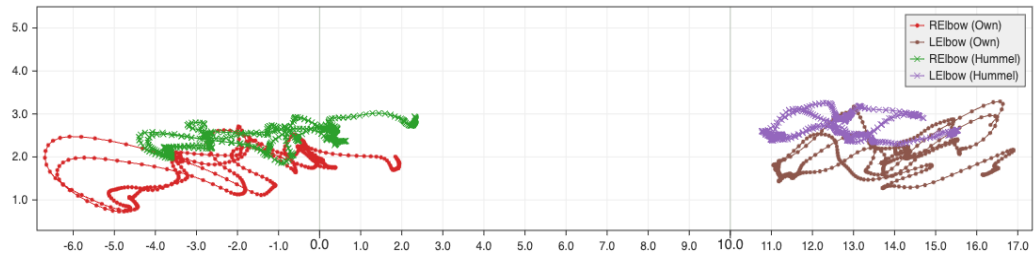


Figure 4.15. Bars 138 to 145 of Hummel's Fantasina Op. 124, averaged comparison of left and right elbows.

While both my own and Hummel's techniques showed similar motions, my own techniques contributed to larger and higher lifts. This difference can be seen in the wrist, where it bounces higher in my own technique, and it can also be seen in the finger movement. Bounces in the wrist can similarly be seen in the hand when using

Hummel's technique, however, it is only to support the finger movement for creating a *staccato* sound. The finger technique of flicking or snapping the fingers inwards, towards the hand, created the *staccato* chords, while my own technique uses hand bounces to execute the *staccato* chords.

4.1.2 Sonata in D K576, First Movement, by Mozart

Example 6. Bars 1 to 4 of Mozart's Sonata in D, K. 576, First Movement.



Figure 4.16. Bars 1 to 10 of Mozart's Sonata in D, K. 576, First Movement. Copyright 1986 by Bärenreiter-Verlag and NMA Online, published by the Mozarteum Foundation Salzburg in collaboration with the Packard Humanities Institute, 2006ff. Musical example reproduced with kind permission of the Mozarteum Foundation [accessed on 22 September 2024].

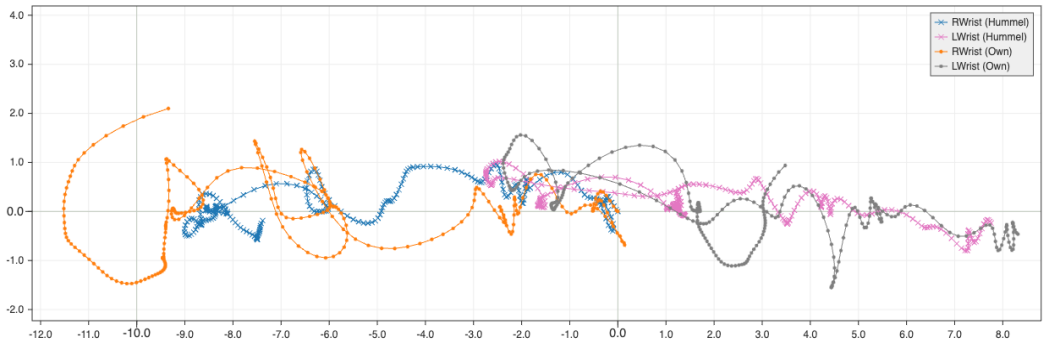


Figure 4.17. Bars 1 to 4 of Mozart's Sonata in D, K. 576, First Movement, averaged comparison of left and right wrists.

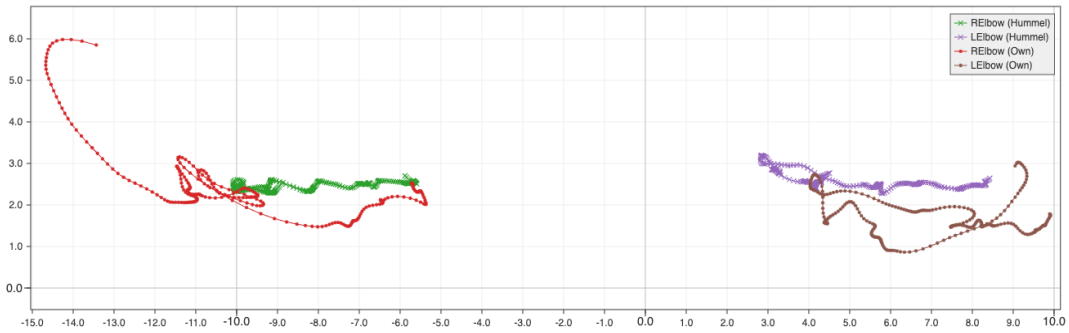


Figure 4.18. Bars 1 to 4 of Mozart's Sonata in D, K. 576, First Movement, averaged comparison of left and right elbows.

In the beginning of the Sonata, where quavers were played using Hummel's technique, the use of finger joints resulted in a swiping motion by the fingers that could be seen especially in the repeated A notes in bar 2. This is slightly different

from the snapping or flicking action that was mentioned for *staccato* notes in previous examples, as the swiping motion of the fingers were done in a slower manner, producing a gentler sound in comparison. While some wrist movements could be seen, it was smaller than my own techniques where the arms were used in playing the quavers in a detached manner. The long notes (crotchet and dotted crotchet) in the first half of bar 2 and bar 4 also resulted in hand lifts and the extension of elbow outwards with my own techniques that were not present with Hummel's techniques due to the difference in posture. It was obvious from the recordings that Hummel's technique presented softer dynamics, while my own technique generally produced a louder and more percussive sound, and it is also reflected through movements used.

Although the recording included is longer covering bars 1–16, the comparison of motion paths only includes bars 1 to 4 to ensure that the data remained clear without too much overlapping motion paths that would make the graph difficult to interpret. In using bigger movements and utilizing more parts of the hand in my own techniques, it can be seen from the graph that, in general, there are larger gaps between dots which signifies faster movements. These movements with quicker velocity would lead to stronger impact on the keys. Therefore, it is only natural that my own technique that leverages speed and bigger movements produced louder tones. For example, a clear *crescendo* can be heard through the unison theme in bars 1 to 2 and bars 5 to 6 using my own techniques. However, this was much more subtle when using Hummel's techniques.



Mozart - Sonata in D, K. 576, 1st Movement, bars 1–16 (Own Technique)



Mozart - Sonata in D, K. 576, 1st Movement, bars 1–16 (Hummel’s Technique)

Example 7. Bars 38 to 41 of Mozart's Sonata in D, K. 576, First Movement.



Figure 4.19. Bars 38 to 43 of Mozart's Sonata in D, K. 576, First Movement. Copyright 1986 by Bärenreiter-Verlag and NMA Online, published by the Mozarteum Foundation Salzburg in collaboration with the Packard Humanities Institute, 2006ff. Musical example reproduced with kind permission of the Mozarteum Foundation [accessed on 22 September 2024].

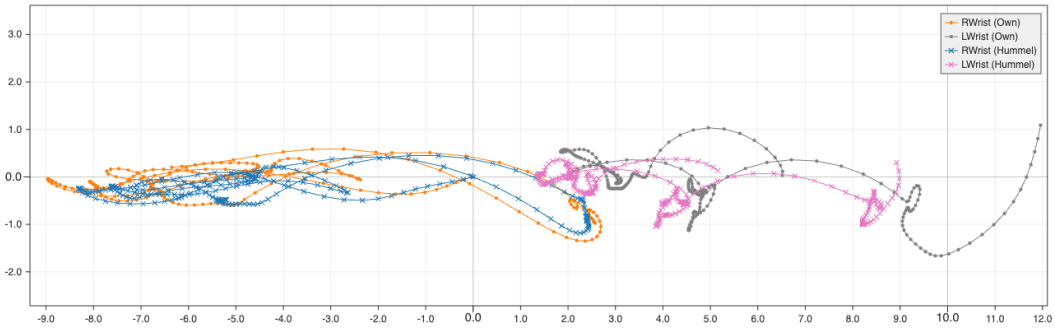


Figure 4.20. Bars 38 to 41 of Mozart's Sonata in D, K. 576, First Movement, averaged comparison of left and right wrists.

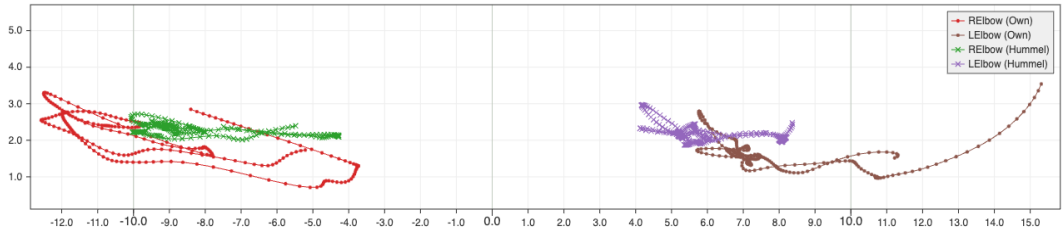


Figure 4.21. Bars 38 to 41 of Mozart's Sonata in D, K. 576, First Movement, averaged comparison of left and right elbows.

The position of the wrist and elbow in Hummel's technique restricted the movements of the hand and limited the support of the wrist. As mentioned in Example 2, while using the fingers to play ascending lines using his hand position was acceptable, playing descending lines with the outwardly turned hand with only

fingers resulted in a sound that is not as clear as using my own technique. The same issue could be observed when playing trills in bar 40. While I played the trills with the hand and elbow extended outwards when using my technique, playing them using Hummel's technique led to using more of the fingers than the hand, and a generally softer sound. However, this may also be due to my lack of familiarity of using these parts of the hands in playing quick phrases and in executing the minute nuances needed for the techniques such as a trill, not to mention using these light techniques on a modern piano. I have to acknowledge that some of these muscles or part of the hand were only newly explored and activated for these tasks.

When using my own technique, it shows in the video recording that the hand extended outwards and contracted inwards frequently, making large movements with the arm and elbow. However, the magnitude of the right wrist motion paths was quite similar despite using different techniques, with only small differences where my own techniques produce a slightly larger motion. This is because when using Hummel's technique, the fingers that are turned outwards, lead, while the wrists stayed inwards. This slight change in approach resulted in a different sonic outcome. While my own techniques allowed a *crescendo* and *decrescendo* according to the contour of the right-hand melody of bars 38 and 39, it is difficult to express the same dynamics using Hummel's techniques due to the hand position. Contrastingly, Hummel's technique demonstrated a more direct and simpler way of executing the melody with lesser change in dynamics but with more clarity.



Mozart - Sonata in D, K. 576, 1st Movement, bars 38–41 (Own Technique)



Mozart - Sonata in D, K. 576, 1st Movement, bars 38–41 (Hummel’s Technique)

Example 8. Bars 121 to 129 of Mozart's Sonata in D, K. 576, First Movement.



Figure 4.22. Bars 119 to 132 of Mozart's Sonata in D, K. 576, First Movement. Copyright 1986 by Bärenreiter-Verlag and NMA Online, published by the Mozarteum Foundation Salzburg in collaboration with the Packard Humanities Institute, 2006ff. Musical example reproduced with kind permission of the Mozarteum Foundation [accessed on 22 September 2024].

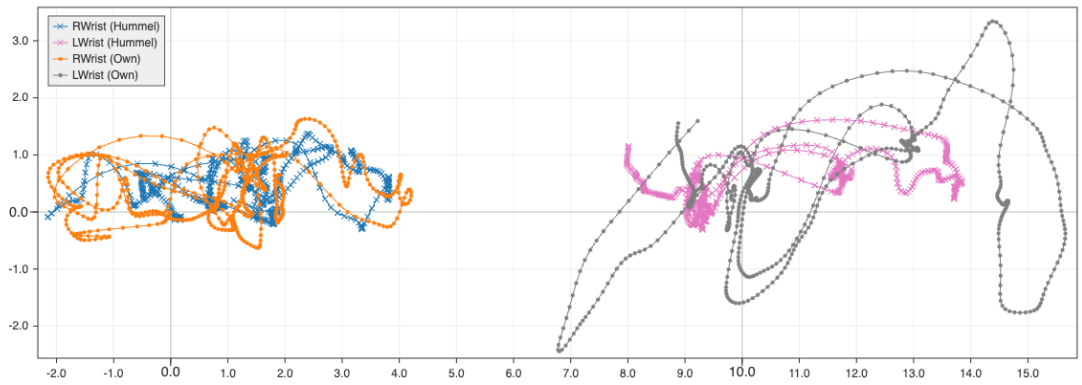


Figure 4.23. Bars 121 to 129 of Mozart's Sonata in D, K. 576, averaged comparison of left and right wrists.

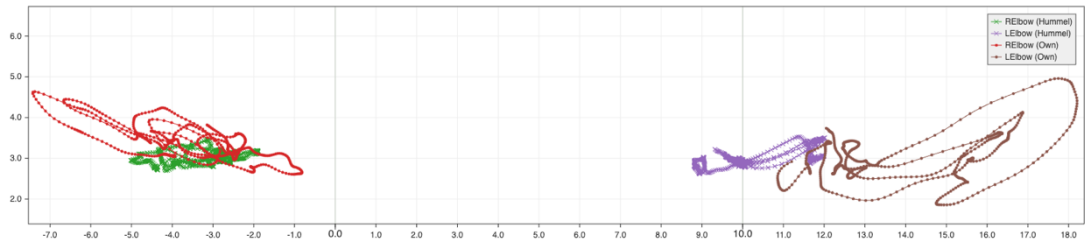


Figure 4.24. Bars 121 to 129 of Mozart's Sonata in D, K. 576, averaged comparison of left and right elbows.

In this example, both hands showed several lifts in using my own technique. The chords on the left hand were louder and clearer, and the hand lifts occupied the spaces for rests. There were also some downward hand and arm movements that were employed to help accentuate the downbeats. These hand movements were used to shape the slurs in bars 128–129 and also help reinforce the clarity of the rhythm where a rest is present between the two sets of three quavers in bar 128. When Hummel's techniques were in use, these downward movements of the hand were omitted, and substituted with only finger movements, and thus resulted in a slight rush in tempo around bars 128–129.

The 4th and 5th finger were also observed to produce weaker and lighter tones in bar 130 when Hummel's techniques were in use, while my own techniques produced a heavier tone. This was because Hummel's techniques of placing the elbows near the body limited the use of arms and caused the 4th and 5th finger to produce softer tones especially in higher octaves where the forearm would point outwards with the elbows kept close to the body, making it harder to exert force. On the other hand, with the support of the hand and wrist in my own techniques, the 4th and 5th fingers were able to produce a comparatively louder tone. This is in line with Ortmann's theory where he mentioned: 'The complex problem of physiological

mechanics as applied to piano technique resolves itself finally, into one basic question: the variations of force produced at the key-surface by the player.'[12] While physicists conclude that the force exerted contributes to a difference in tone, this could also mean that certain kinds of techniques or approaches can only produce a certain range of forces, hence specific kinds of tones on the piano.



Mozart - Sonata in D, K. 576, 1st Movement, bars 121–137 (Own Technique)



Mozart - Sonata in D, K. 576, 1st Movement, bars 121–137 (Hummel's Technique)

In observing the difference in hand and elbow postures, while Hummel's techniques produced smaller movements, they also allowed for new ways of playing,

[12] Otto Ortmann, *The Physiological Mechanics of Piano Technique* (Stephen Austix and Sons, 1929), p. 3.

for example using the wrists, fingers, and joints that I did not frequently use in piano playing, instead of relying greatly on the whole arm and extending elbows. The use of smaller joints such as the finger in Hummel's techniques naturally led to a slightly softer output and a less robust sound in *forte* sections. Because of this, the sound produced using techniques reimagined through Hummel's instructions were not as loud compared to using my own techniques, but not inadequate on a modern piano.

These examples and comparisons demonstrate the relationship between the series of new touches with their respective sounds. For instance, after applying and observing Hummel's finger technique of snapping the fingers inwards, it became apparent that this technique makes greater use of the finger joint compared to my own technique that uses more vertical movements from the knuckle (base of the finger joints). The technique generally produced a drier sound, but it also has a crisper quality which clarified why this technique is particularly suited in playing staccato notes. Although it is generally lighter, using this technique to play detached chords would lead to a very specific way of 'grabbing' the chord, which, when done quickly, produces a 'biting' effect. This effect can be observed in Example 5 of Chapter 4.1.1 , especially the left-hand chords of bars 138–139 and bars 142–143. In the non-chordal section, it presented a touch that was more detached than my usual approach, offering another way of playing staccato. The outwardly turned wrist could also work as an alternate solution to my constant need to extend the elbow. While the hand position of the outwardly turned wrists would not suit all kinds of phrases, it provided an alternate way for playing ascending patterns for the right hand and descending patterns for the left hand, served as an easier solution for playing patterns

such as consecutive thirds, and helped bring out the top melody line on the right hand naturally.

4.2 Carl Czerny

Czerny's techniques and postures that were emphasized include:

1. Forwardly inclined back
2. Still wrist and hand
3. Straight line from elbow to finger knuckles
4. Perpendicular finger motion

As mentioned in Chapter 2.3.1 considering Czerny's close relationship with Beethoven, and that he was Beethoven's student, it is only natural that Beethoven's work is used in demonstrating Czerny's techniques. The first movement of the Waldstein sonata consists of repeating notes, alternating basses, arpeggios, and chordal sections. Its interesting short motives provided musical examples that would showcase Czerny's techniques, especially in demonstrating the perpendicular finger motion that is completely different from Hummel's instruction.

4.2.1 Beethoven's Piano Sonata No.21 in C major, Op. 53 (Waldstein), First Movement

Example 9. Bars 14 to 17 of Beethoven's Piano Sonata No.21 in C major, Op. 53 (Waldstein), First Movement.



Figure 4.25. Bars 14 to 19 of Beethoven's Piano Sonata No.21 in C major, Op. 53 (Waldstein), First Movement. (copyright 1976 by G. Henle Verlag, München).

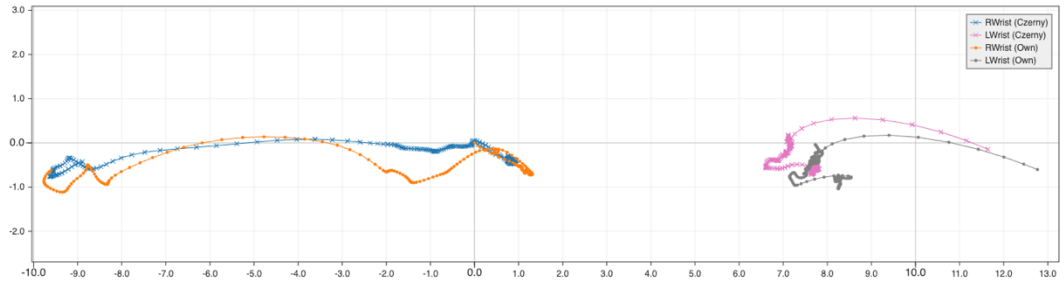


Figure 4.26. Bars 14 to 17 of Beethoven's Piano Sonata No.21 in C major, Op. 53, First Movement, averaged comparison of left and right wrists.

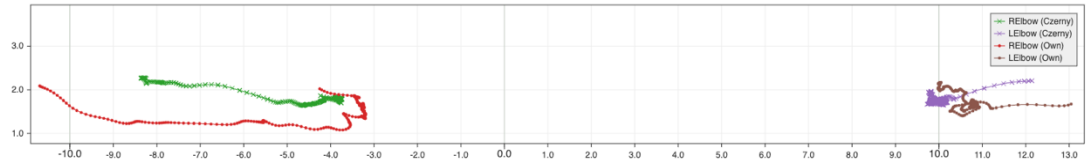


Figure 4.27. Bars 14 to 17 of Beethoven's Piano Sonata No.21 in C major, Op. 53, First Movement, averaged comparison of left and right elbows.

The alternation between two notes at the start of the piece could be considered one of the main characteristics of the first movement of the Waldstein Sonata. While the movements of fingers and hands looked similar in both recordings using Czerny's technique and my own, it is clear from the motion paths of bars 14 to 17 that the wrist and elbow movements are noticeably smaller when following

Czerny's techniques. This is because of the use of Czerny's perpendicular finger motion in the alternating bass line instead of using the whole arm. While pure finger motions created a balanced and even sound, the hand soon felt tired without the help of the wrist and arm. Upon closer observation of the two recordings, while both my technique and Czerny's technique employ the finger in playing, I lifted my finger higher with some help from the rotation of the wrist, providing the support of the arm to the fingers when using my own technique. Without much rotation from the wrist, Czerny's technique focuses on the perpendicular action of the fingers, producing slightly dryer tones, and resulting in a faster tempo. Furthermore, it could be heard that in using my own techniques, the main beats were clearly heard due to the help of wrist rotation. The video recording of this example is combined with the following example for a longer demonstration.

Example 10. Bars 23 to 30 of Beethoven's Piano Sonata No.21 in C major, Op. 53 (Waldstein), First Movement.



Figure 4.28. Bars 23 to 30 of Beethoven's Piano Sonata No.21 in C major, Op. 53 (Waldstein), First Movement. (copyright 1976 by G. Henle Verlag, München).

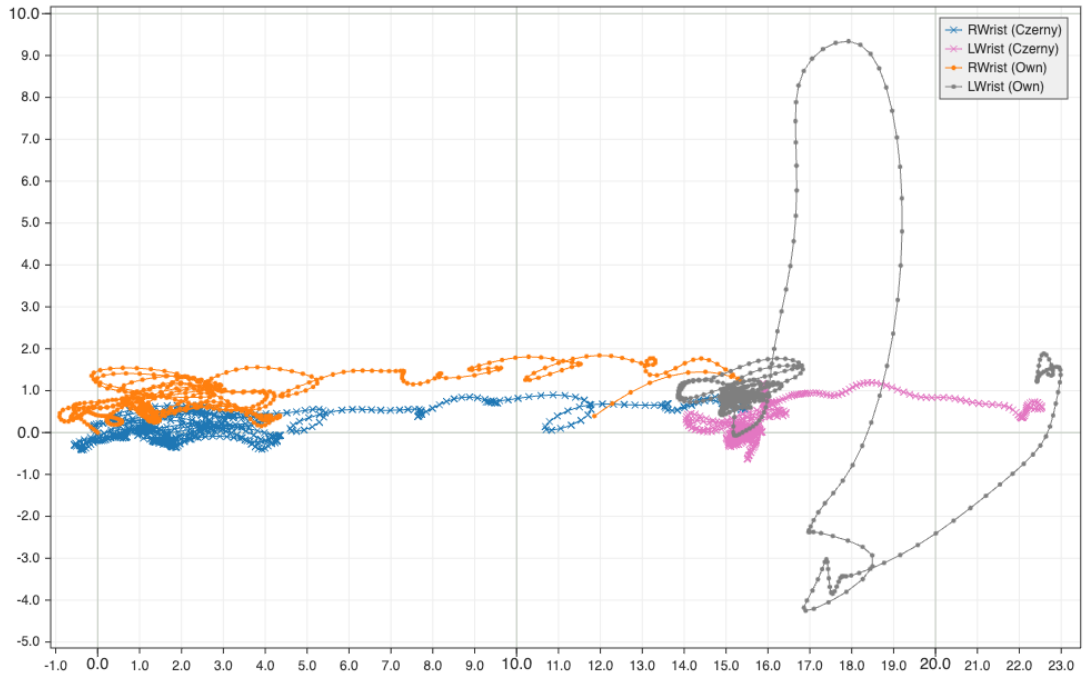


Figure 4.29. Bars 23 to 30 of Beethoven's Piano Sonata No.21 in C major, Op. 53, First Movement, averaged comparison of left and right wrists.

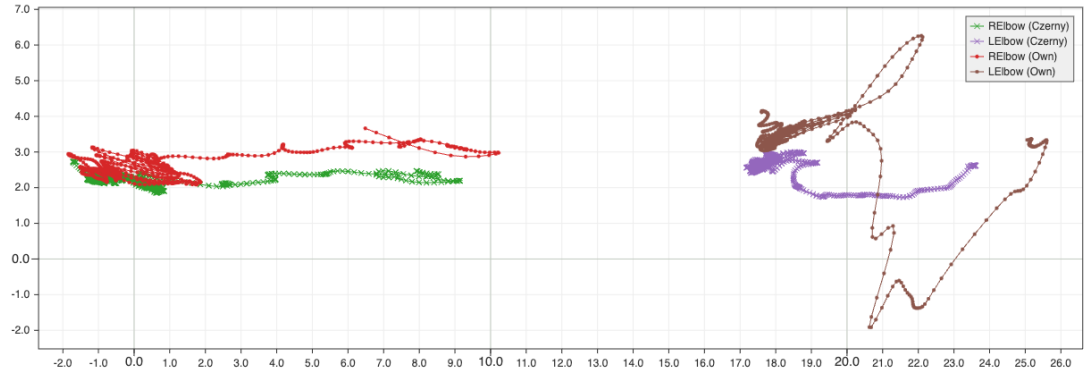


Figure 4.30. Bars 23 to 30 of Beethoven's Piano Sonata No.21 in C major, Op. 53, First Movement, averaged comparison of left and right elbows.

This example that consists of the left-hand arpeggios also sees a similar difference between both techniques. When using my own technique to play the left-hand arpeggios involving the fifth finger, it uses a certain degree of rotation of the wrist, providing more space for my fifth finger to be played from a higher position. While some of that could also be seen in Czerny's techniques, I tried to keep the wrist as still as possible and not lifting the outer part of my hand too much, but it felt ineffective without the rotation of the wrist; it was difficult to only use the fingers to play the arpeggio section, especially when *f* and *sf* were required. Not only that, I was also limited by the size of my hand. By spreading my fingers out and putting them on the needed notes, there was not enough space for a perpendicular motion of the fifth finger. The same issue could be observed in the right hand in bars 28 and 29. Due to the rotation of the wrist in my technique that provided a larger momentum onto the keyboard, it could be heard that that the first note of the grouped semiquavers from bar 28 to 30 was clearer in comparison to using Czerny's techniques.

As for the large movement presented in the left wrist and elbow, it did not directly produce the resulting sound as it is a hand lift that follows the last chord after a long section of *arpeggio* accompaniment. From the perspective of the performer, the hand lift was an indication of finality as the chord (played together, rather than in the form of arpeggio like in the previous bars) was at the climax of the phrase, following the build-up and intensity created by the preceding arpeggios. While it is my intention to highlight that chord, hand lifts like these were done naturally without much thought when using my technique, as my hand and arms were in a freer state. However, in a more heightened state of awareness, using Czerny's techniques mindfully, and knowing he encouraged the use of a still hand, the hand lift was omitted. Instead, the left hand moved horizontally, preparing for the next note.



Beethoven - Piano Sonata No.21 in C major, Op. 53 (Waldstein), 1st Mvt, bars 14–30 (Own Technique)



Beethoven - Piano Sonata No.21 in C major, Op. 53 (Waldstein), 1st Mvt, bars 14–30

(Czerny’s Technique)

Example 11. Bars 50 to 57 of Beethoven's Piano Sonata No.21 in C major, Op. 53 (Waldstein), First Movement.



Figure 4.31. Bars 50 to 57 of Beethoven's Piano Sonata No.21 in C major, Op. 53 (Waldstein), First Movement. (copyright 1976 by G. Henle Verlag, München)

The absence of circular wrist motions can also be clearly seen when using Czerny's techniques in this example, especially when playing the syncopated long notes. While it is common for me to play long notes using the arm, together with circular motions and a lift, these movements were replaced with a single perpendicular finger motion, and hence the absence of circular motions. While one can argue that the two ways of playing eventually led to playing the same notes of the music, this example demonstrated a visible difference to the audience and also a different internal sensation and experience as a performer. While the visual difference can be seen through the video recordings and also through the motion paths in Figure 4.32., the difference in playing experience and sensation affected the link between my own movement and the music played. In using my own techniques and movements, I made use of the circular motion of the hand when playing the long minim notes to fill up the value of the notes, and at the same time, bringing out the syncopation in the rhythm of this section with the help of the arm. A similar scenario was very well illustrated by Youn Kim when discussing the musicking body. She wrote:

> Consider the motion of a person in the act of walking: the moment of silence that exists between the two instances of their feet striking the floor is filled with a suspended bodily motion. In a similar way, music is also considered to be a continuous movement; there may exist a moment of silence, a gap, between the two preceding and proceeding notes. However this moment is filled with suspended motion just like the continuous act of walking.[13]

Therefore, when using only the perpendicular finger motion in playing the same notes without the circular movements, it lacked the natural guidance or internal reference from myself as a performer. If these movements may be considered extraneous and not encouraged in a performance as explained in Chapter 3.2 , one may not be able to rely on these movements as a guide. While I followed Czerny's perpendicular finger technique, I did not succeed musically in using this technique in this example. Perhaps, I should seek guidance from another element, for example, by exploring my inner world, just as how J.S. Bach relied on his internal resource rather than external dynamics, expressing his feelings in melodic and harmonic figures when he wished to express deep emotion, especially when using keyboard instruments such as a harpsichord.[14]

[13] Kim, *Body and Force in Music,* p. 83.
[14] Johann Nikolaus Forkel, *Johann Sebastian Bach*, pp. 52–60, cited in Yonit Lea Kosovske, *Historical Harpsichord Technique: Developing La Douceur Du Toucher*, ed. by Paul Elliot (Indiana University Press, 2011), p. 63.

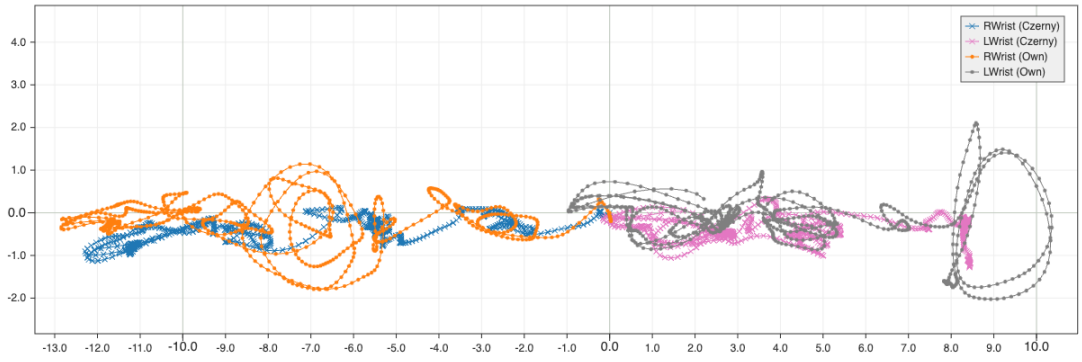


Figure 4.32. Bars 50 to 57 of Beethoven's Piano Sonata No.21 in C major, Op. 53, First Movement, averaged comparison of left and right wrists.

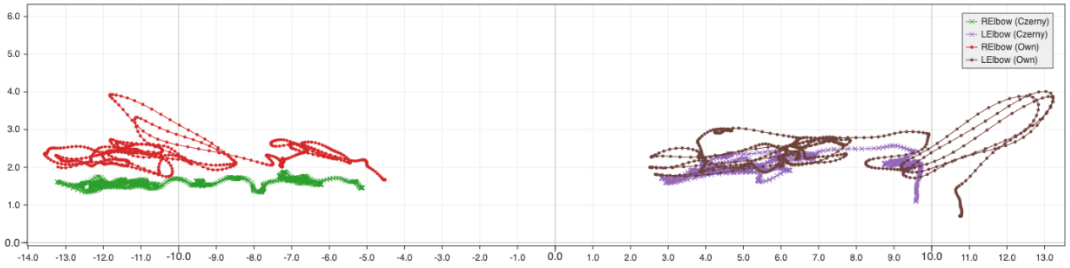


Figure 4.33. Bars 50 to 57 of Beethoven's Piano Sonata No.21 in C major, Op. 53, First Movement, averaged comparison of left and right elbows.

Beethoven - Piano Sonata No.21 in C major, Op. 53 (Waldstein), 1st Mvt, bars 50–61

(Own Technique)



Beethoven - Piano Sonata No.21 in C major, Op. 53 (Waldstein), 1st Mvt, bars 50–61

(Czerny's Technique)

Example 12. Bars 58 to 61 of Beethoven's Piano Sonata No.21 in C major, Op. 53 (Waldstein), First Movement.



Figure 4.34. Bars 58 to 61 of Beethoven's Piano Sonata No.21 in C major, Op. 53 (Waldstein), First Movement. (copyright 1976 by G. Henle Verlag, München).

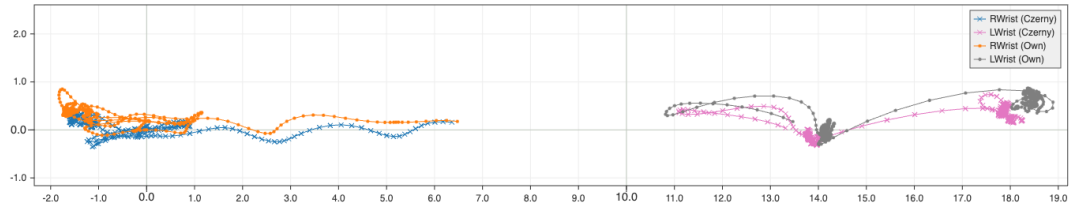


Figure 4.35. Bars 58 to 61 of Beethoven's Piano Sonata No.21 in C major, Op. 53, First Movement, averaged comparison of left and right wrists.

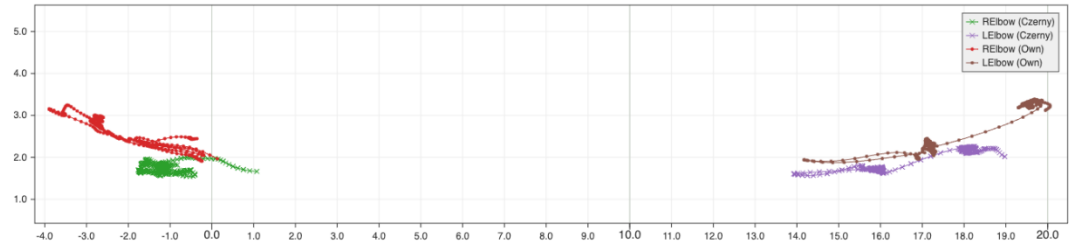


Figure 4.36. Bars 58 to 61 of Beethoven's Piano Sonata No.21 in C major, Op. 53, First Movement, averaged comparison of left and right elbows.

While my own technique used the rotation of the wrist to help with repeated alternating notes, the wrist was kept still when using Czerny's technique, and notes were played using the knuckles at the base of fingers to create the perpendicular motion. In terms of sound, the rotation of the wrist, together with the extended elbow (see Figure 4.36) helped create a more powerful tone for the notes, while Czerny's techniques produced a rather clear tones that were not as powerful in comparison. I

was able to play with more contour using my own technique as the rotation of wrist afforded me the ability to crescendo at bars 58 and 59, leading up to the forte section in bar 60. It can be heard from the recording using my own techniques that I played the right-hand notes of bar 60 in a more percussive manner. However, in using Czerny's perpendicular technique, while I tried to play loud as requested, the resulting touch was less percussive. The crescendo was also not as obvious when using perpendicular finger technique. However, the tones produced using Czerny's technique brings clarity from both hands. This example being a continuation of the previous example, the demonstration of techniques was combined in the video examples included at the end of Example 11.

Example 13. Bars 96 to 103 of Beethoven's Piano Sonata No.21 in C major, Op. 53 (Waldstein), First Movement.



Figure 4.37. Bars 96 to 105 of Beethoven's Piano Sonata No.21 in C major, Op. 53 (Waldstein), First Movement. (copyright 1976 by G. Henle Verlag, München).

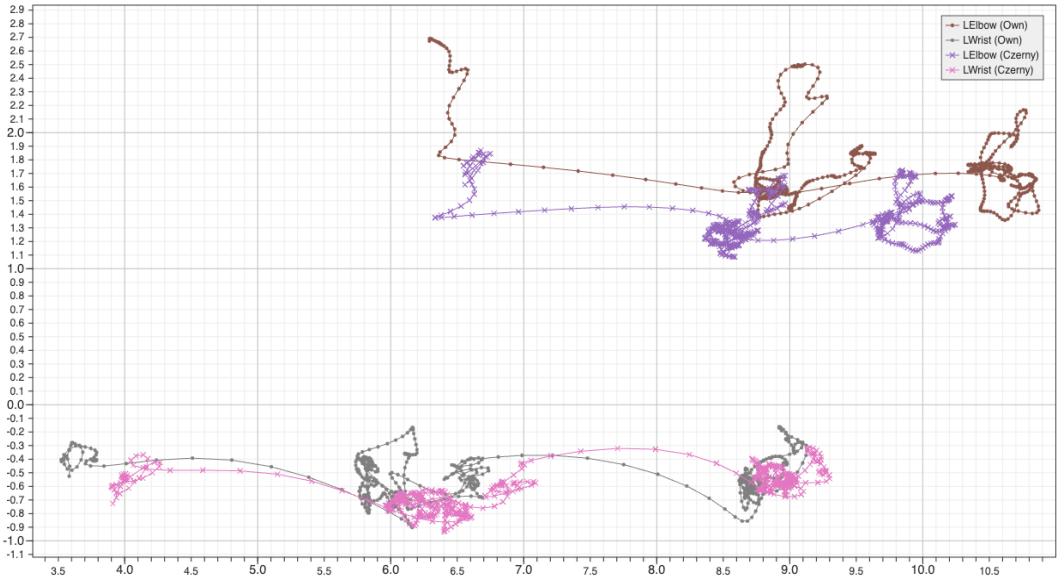


Figure 4.38. Bars 96 to 103 of Beethoven's Piano Sonata No.21 in C major, Op. 53, First Movement, averaged comparison of left elbow.

In this example, my own techniques and Czerny's techniques seem to have produced similar sound outcomes in soft sections of this example. However, a difference in sound could be heard in *forte* parts in bars 99 and 103 as the recording using Czerny's techniques was not as powerful as my own techniques. This is because the arms, including elbows, were used especially in the left hand to support the loud dynamics in my own technique. As the elbow position in Czerny's quiet arm technique did not restrict the movement of the arm and elbow, unlike Hummel's passive elbow, it produced rather loud tones, but not quite as powerful as my own which was facilitated by the whole arm. This is also shown in the motion path of the left elbows where both Czerny's and my own techniques have similar motion paths with larger movements for my own approach. Although Czerny's techniques may not achieve the same loudness as using my own techniques, the clarity in sound heard through the below recording using Czerny's techniques was undeniable. The perpendicular finger technique ensured a firm touch and tone to each of the notes played, resulting in overall clarity and also in clear notes, which I believe is what Czerny was looking for, as he wrote when explaining about an exercise:

> The 5th Exercise has for its aim to accustom the beginner to a firm touch and tone, as he must strike one key several times successively with the same finger. The hand must here be held as tranquilly as possible over the 5 keys, so that the re-iterated percussion may be produced by the quiet movement of the single finger.[15]

[15] Carl Czerny, *Complete Theoretical and Practical Pianoforte School, Op500,* trans. by J. A Hamilton (R. Cocks, 1839), I, p. 7.



Beethoven - Piano Sonata No.21 in C major, Op. 53 (Waldstein), 1st Mvt, bars 96–112 (Own Technique)



Beethoven - Piano Sonata No.21 in C major, Op. 53 (Waldstein), 1st Mvt, bars 96–112 (Czerny's Technique)

In short, Czerny's posture and techniques were more similar to my own as compared to Hummel's. The main difference between my playing approach and Czerny's techniques lies in his instruction to keep the wrist and elbow in a straight line and in keeping non-oblique hands, which then contributed to the absence of movements such as hand lifts and circular wrist motions. The perpendicular finger motions were more capable of producing a clear sound on a modern grand piano but were less powerful when compared to my own playing. Hummel's techniques and

approaches on the other hand showed significant differences from my own technique, especially in terms of outwardly turned hand positions and the use of finger joints.

Kosovske when writing on historical harpsichord technique, mentioned that finger motion was documented in various early writings; some described it as perpendicular motion, others mentioned to play in gliding, peeling, or drawing the fingertip towards the palm,[16] similar to the two different finger techniques demonstrated above. Coming from the perspective of a twenty-first century pianist, I noticed that Czerny's perpendicular finger movement was more similar to my own techniques, although this could be subjective to each pianist, depending on their background and lineage. However, shifting our perspective to Hummel's time or even earlier, Hummel's use of the finger joint may not be as uncommon, and could even be similar to J.S. Bach's techniques where Forkel described that Bach would 'glide off the forepart of the key, by gradually drawing back the tip of the finger towards the palm of the hand',[17] and is also aligned with Griekenperl's words (translated by Faulkner):

> Let one finger be placed upon a key and serve as the point of support for a finely adjusted weight of the arm, not stiffly or rigidly, but with the express intent of pulling it backward so that it instantly might be drawn in toward the hand.[18]

[16] Yonit Lea Kosovske, *Historical Harpsichord Technique: Developing La Douceur Du Toucher*, ed. by Paul Elliot (Indiana University Press, 2011), p. 55.
[17] *The Bach Reader*, ed. by David and Mendel, pp. 307–308 cited in Kosovske, *Historical Harpsichord Technique,* p. 59.
[18] Quentin Faulkner, 'Griepenkerl on J.S. Bach's Keyboard Technique: A Translation and Commentary', *Glenn Korff School of Music: Faculty Publications*, (1988), p. 64, <https://digitalcommons.unl.edu/musicfacpub/15/>

While the term ‘finger joint’ was not mentioned, these descriptions of finger movements lead to the same technique. According to Kosovske, this method was used on several historical instruments including harpsichords and early pianos as there were accounts where the edges of the keys were especially worn down, and a sloped indentations were created on the keys.[19]

Placing this stroking technique that uses the finger joint in the context of a modern piano, it not only led to quieter movements, but also provided a different solution to playing. While the finger movement of using mainly the joints without much help from the arm can be easily adopted on a modern grand piano when playing simple melody lines, use of the arm to a certain extent is inevitable in playing large loud chords even when using Hummel’s approaches.

In terms of internal references using hand movements, we need to be wary when extraneous movements are not included. For example, as some hand lifts using my own playing were used in rests or gaps between phrases such as in Example 10 and Example 11 above. We need to be cautious of keeping a steady tempo when using Hummel and Czerny’s techniques as we cannot rely on these movements that were considered excessive. Both the historical techniques and approaches to piano playing also resulted in smaller and more limited movements of the hand and showed a gentler outcome in terms of sound. This may also be an effect of the instrument used. While only using smaller movements may at times produce a gentler outcome on a modern grand piano, the same motions may be sufficient for a historical piano.

[19] Kosovske, *Historical Harpsichord Technique*, p. 55.

4.3 Theodore Leschetizky

As Leschetizky's use of the wrist and Deppe's touch could be considered similar to Chopin's playing styles as mentioned in Chapter 2.3.2 their playing techniques and approaches were applied to sections of Chopin's *Grande Polonaise Brillante* Op. 22 as musical examples. The techniques by Leschetizky that were emphasized in this subchapter include:

1. Lowered Wrist Position
2. Upward/Downward Movement of the Wrist
3. Lifted Tone

Due to the realisation of under explored wrist movements in my own techniques mentioned in Chapter 3.3.2 I instantly paired Brée's lifted tone technique that required the use of wrist with the transition notes between the *tutti* section and the *Meno Mosso* section. This was because the motion of the lifted tone technique was described as '[…] finger touches […] instantly lifted from the key by the flying-back of the hand from the wrist'. Moreover, one of the examples where this technique was demonstrated was through Liszt's *Un Sospiro* Etude, where Brée noted that the lifted tones could be used on the beginning melody.[20] Therefore, applying the lifted tone on similar situations such as these transition notes could be a good fit.

[20] Malwine Brée, *The Groundwork of the Leschetizky Method*, trans. by TH. Baker (New York: G. Schirmer, Inc, 1902), p. 31.

Example 14. Bars 15 to 16 of Chopin's *Grande Polonaise Brillante* Op. 22.



Figure 4.39. Bars 8 to 19 of Chopin's *Grande Polonaise Brillante* Op. 22. (Copyright 1998 G. Henle Verlag, München).

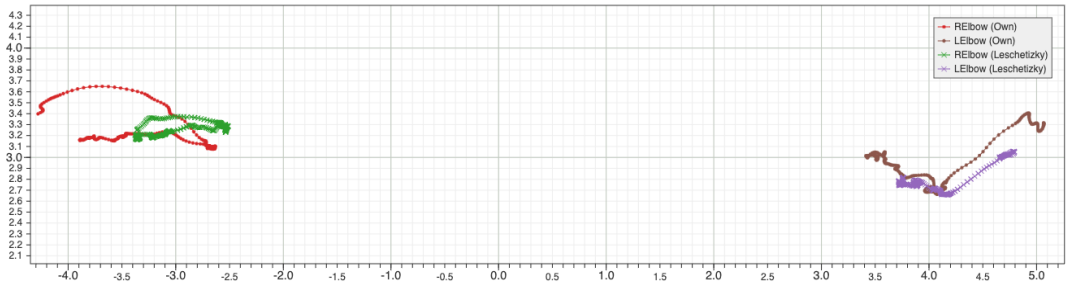


Figure 4.40. Bars 15 to 16 of Chopin's *Grande Polonaise Brillante* Op. 22, averaged comparison of left and right elbows.

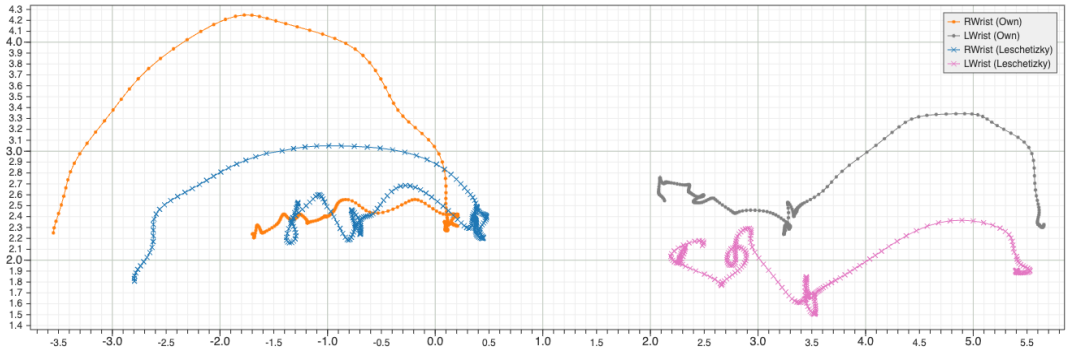


Figure 4.41. Bars 15 to 16 of Chopin's *Grande Polonaise Brillante* Op. 22, averaged comparison of left and right wrists.

The flying back of the hand was not a technique that I was used to as it requires momentum that departs from the wrists. Nevertheless, it was performed to

observe the differences between this and my own techniques. I employed the whole arm when playing these *staccato* notes with my own techniques, and they felt more controlled. Leschetizky's lifted tone techniques, on the other hand, while only employing the wrists, mainly depended on the bouncing of the hand from the wrist, rather than being controlled by the arm. In my experience, the corelation between the different levels of force exerted and the resulting sound was unfamiliar to me at first, as it was not a part of my common playing technique. Therefore, this technique requires practice as one would need know how the lifted tone can be created, and more importantly, how to achieve the desired tone from the wrist.

When playing the transition notes, both my techniques and Leschetizky's techniques produced similar wrist motion paths, apart from the higher lifts of my own technique. However, the difference in the movements of the hand (that were not tracked), can be clearly seen through the two video recordings even without the help of motion capture. In terms of sound produced, both recordings sounded quite similar, even though the processes used to achieve these tones were completely different.



Chopin - Polonaise Op. 22, bars 15–16 (Own Technique)



Chopin - Polonaise Op. 22, bars 15–16 (Leschetizky’s Technique)

Example 15. Bars 17 to 24 of Chopin's *Grande Polonaise Brillante* Op. 22.



Figure 4.42. Bars 17 to 25 of Chopin's *Grande Polonaise Brillante* Op. 22. (Copyright 1998 G. Henle Verlag, München)

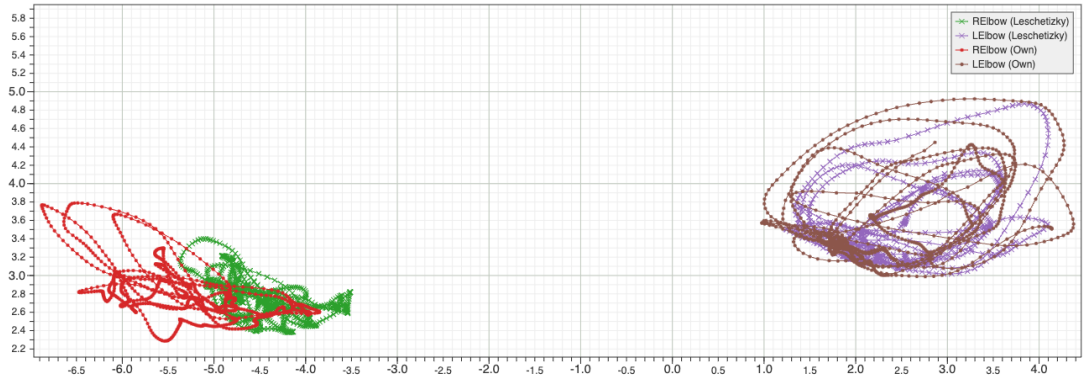


Figure 4.43. Bars 17 to 24 of Chopin's *Grande Polonaise Brillante* Op. 22, averaged comparison of left and right elbows.

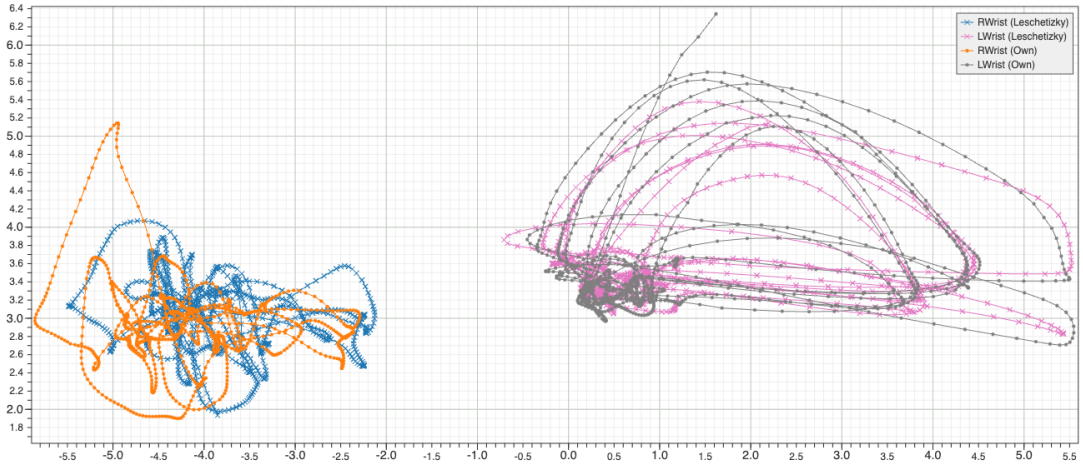


Figure 4.44. Bars 17 to 24 of Chopin's *Grande Polonaise Brillante* Op. 22, averaged comparison of left and right wrists.

In the *Meno Mosso* section following the transition notes, Leschetizky's wrist techniques, especially those with swift upward movements, were employed. As this technique by Leschetizky was mainly performed on the right hand when playing the melody, this example will focus on the motion paths produced by right elbow and wrist. The motion path for the right elbow when using Leschetizky's techniques was considerably smaller than the movements produced when using my own techniques, as the former technique did not involve much use of the upper arm. Therefore, the elbow did not move as much. Similar to the previous example, the exertion of force came mainly through the wrist than through the arm. However, in this example, the use of wrist was easier to control compared to that in Example 14, as I can feel the flow of energy that was being pushed from the wrist.

When practicing the swift upward movements of the wrist, I was able to feel the force that comes from the wrist, causing the wrist to jerk upward slightly. The upward wrist movement would alter the hand position from having a relaxed hand with sinking wrists, to almost a straight line through the wrist and arm, or even

higher. When this happens, the flow of energy would move from the arm through the wrist and onto the knuckles and fingertips.

The outcome of the motion paths of the wrists when using Leschetizky's techniques was much more supple when compared to my own techniques, which were bigger, sharper, and more jagged. When looking at the recordings, we can see the difference in the movement of the wrists; when listening to the recordings using Leschetizky's techniques, a slight emphasis can be heard when wrist movements were used.



Chopin - Polonaise Op. 22, bars 17–24 (Own Technique)



Chopin - Polonaise Op. 22, bars 17–24 (Leschetizky's Technique)

Example 16. Bars 107 to 110 of Chopin's *Grande Polonaise Brillante* Op. 22.



Figure 4.45. Bars 107 to 110 of Chopin's *Grande Polonaise Brillante* Op. 22. (Copyright 1998 G. Henle Verlag, München).

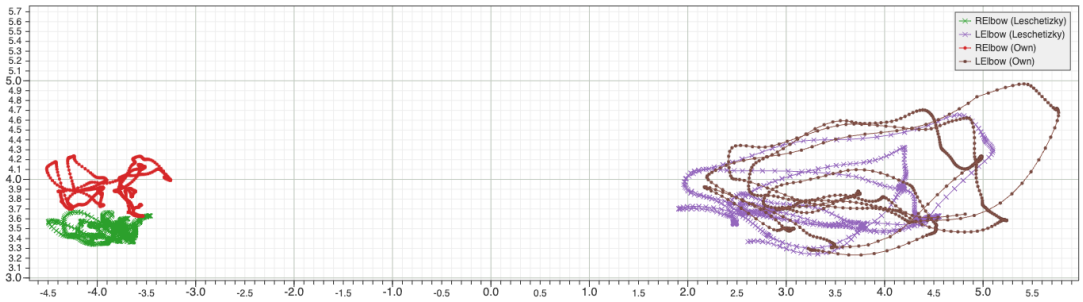


Figure 4.46. Bars 107 to 110 of Chopin's *Grande Polonaise Brillante* Op. 22, averaged comparison of left and right elbows.

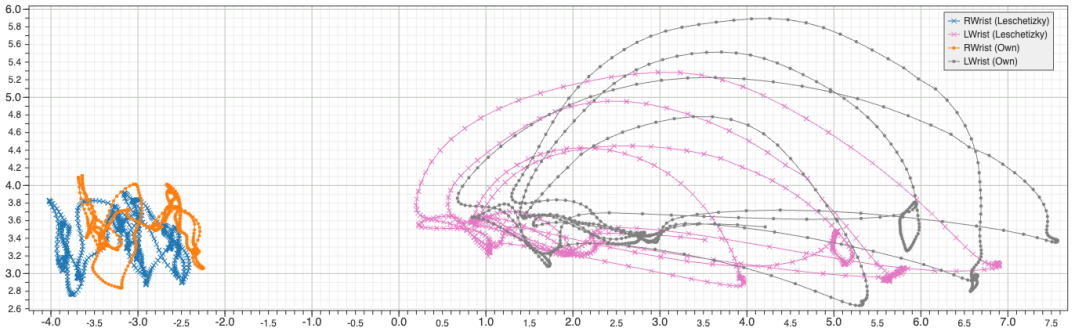


Figure 4.47. Bars 107 to 110 of Chopin's *Grande Polonaise Brillante* Op. 22, averaged comparison of left and right wrists.

In bars 107–110, Leschetizky's wrist movements were used again against my own techniques. While Leschetizky's techniques generally produced smaller

movements for the elbows on both hands and the left wrist, there are some similarities in the right-hand wrist movements. However, the techniques used were quite different. To examine this more closely using the recordings, when using Leschetizky's techniques, the up-down movements were performed while pressing down notes for extra support. However, my hand was kept quite still when playing the melody on the right hand, and the subtle wrist motion when using my own techniques were only produced when I lifted my hand. Therefore, Leschetizky's wrist movement can be considered a sound producing movement, but not my own. Visually, one can see that my wrist produced a much more supple movement when using Leschetizky's wrist technique.

Leschetizky's swift upward wrist movement that was used on the melody lines also complement Chopin's ideas that the wrist is the respiration of the voice.[21] According to Gretsch's experience with Chopin:

> Today Chopin showed me another new, simple way of obtaining a marvellous result. I had felt in what respect my playing was lacking, but without knowing the solution. True to his principle of imitating great singers in one's playing, Chopin drew from the instrument the secret of how to express breathing. At every point where a singer would take a breath, the accomplished pianist […] should take care to raise the wrist so as to let it fall again on the singing note with the greatest suppleness imaginable. To attain

[21] Frederic Chopin, *Projet de Methode*, cited in Jean-Jacques Eigeldinger, *Chopin: Pianist and Teacher: As Seen by His Pupils*, ed. by Roy Howat, trans. by Naomi Shohet, Krysia Osostowicz, and Roy Howat (Cambridge University Press, 1986), p. 45. The statement 'The wrist: respiration in the voice' appeared at the head of a ruled sheet of paper, which was believed to be originally a part of Chopin's *Methode*. (see p. 113)

> this *souplesse* is the most difficult task I know. But once you succeed in doing it, then you laugh with joy at the beautiful sound, and Chopin exclaims, *'C'est cela, parfait! merci!'*.[22]

The use of the wrist played a crucial role for both Chopin and Leschetizky's techniques in achieving their desired effect of producing beautiful singing tones on the piano. The otherwise rigid hand obtained suppleness through the use of the wrist and produced a beautiful sound. Additionally, if Chopin was equating the use of wrist to a singer's breathing, it may also be linked to the phrasing of the music. That said, my two versions using different techniques were also phrased differently. My own technique focused on connecting all the notes on the right hand and ensuring that the melody stands out, but the phrase marks were neglected. However, while using Leschetizky's wrist technique, I followed the phrase marks noted in the music; I raised my wrist when finishing one phrase just as Chopin advised and used more wrist especially in playing the first note of every phrase, imitating his way of expressing breathing on the piano. As a whole, Leschetizky's wrist movements expanded my wrist techniques; these movements helped activate my wrists in using up-down movements, producing a more elastic and supple movement of the wrists.

[22] Maria von Grewingk, *Eine Tochter Alt-Rigas, Schulerin Chopins* (Riga: Löffler, 1928), pp. 9–10, cited in Jean-Jacques Eigeldinger, *Chopin: Pianist and Teacher: As Seen by His Pupils*, ed. by Roy Howat, trans. by Naomi Shohet, Krysia Osostowicz, and Roy Howat (Cambridge University Press, 1986), p. 45.



Chopin - Polonaise Op. 22, bars 107–110 (Own Technique)



Chopin - Polonaise Op. 22, bars 107–110 (Leschetizky's Technique)

While some techniques such as the lifted tone resulted in similar outcomes in sound, Leschetizky's wrist techniques demonstrated the ability in accentuating and emphasising notes, as seen in Example 15. This technique when paired with Chopin's ideas of breathing on the piano also effectively phrased the music according to the score.

4.4 Ludwig Deppe

Similar to Leschetizky's techniques, Deppe's playing techniques and approaches were also applied onto sections of Chopin's *Grande Polonaise Brillante* Op. 22 as musical examples. The techniques and instructions that were emphasized include:

1. Low Seat (To pair with Deppe's feather-light hand technique)
2. Hand light as feather
3. Curvilinear movements

Example 17. Bars 59 to 62 of Chopin's *Grande Polonaise Brillante* Op. 22.

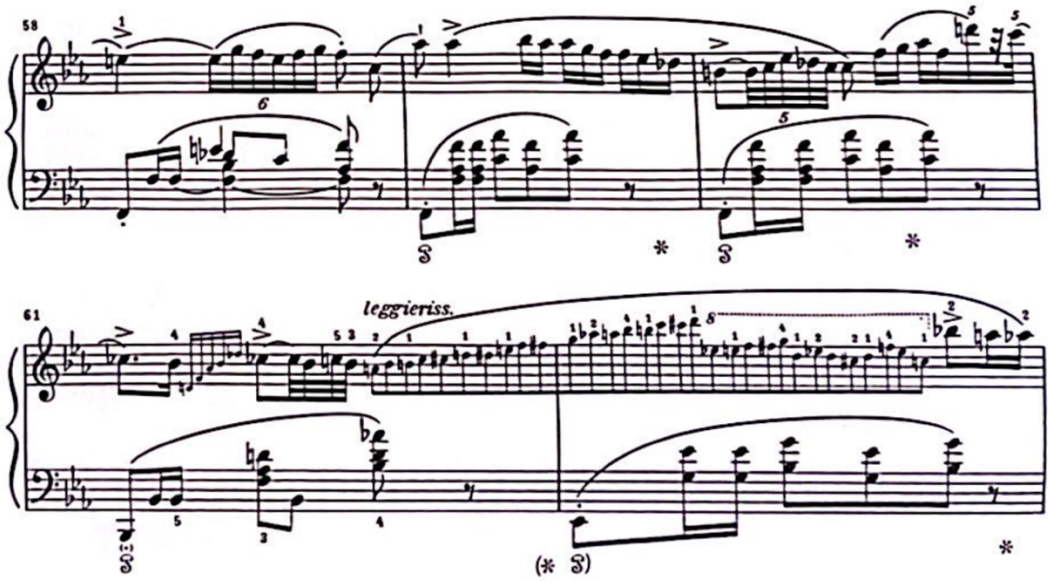


Figure 4.48. Bars 58 to 62 of Chopin's *Grande Polonaise Brillante* Op. 22. (Copyright 1998 G. Henle Verlag, München).

When using Deppe's techniques, the whole section was played with Deppe's feather-light hand approach in mind. Furthermore, the wrist was clearly elevated, and the position to create rapport (previously explained in 3.4.2) was maintained especially in the *leggierissimo* grace note sections. Therefore, instead of using more of my body or back, the majority of the movements and actions originated from the

shoulder joint, carrying the whole arm. The learning process of Deppe's technique was noted in my self-reflection log from 25th Oct 2022:

> […] Deppe's number one characteristic when it comes to the feather-light hand would be to carry the hands using the shoulder and back muscles. For this reason, he introduced the exercise where one raised the hand using the shoulder and back muscles and slowly lowered it until it touches the key. It is indeed a very useful exercise to make sure that I am using the correct muscles to sustain and carry my arm. When raising the hand high, a burn could be felt at the shoulder and back area. When lowering, I could feel that the hand is still being carried by the same muscles as the sensation will persist. Therefore, when playing the piano in this manner, the back and shoulder muscles will feel fatigued after a short period of time.

On the other hand, when using my own techniques, not only were the hand positions different where my hands kept an almost straight line from the wrist to the elbow, more finger action can also be seen in the right hand when the melody was played. While this section emphasizes the implications of movements of the hand using Deppe's techniques, I noticed that similar to the previous comparisons, my own techniques tend to produce slightly louder tones, while using Deppe's techniques produced looser, more flowing tones; they sounded more effortless and relaxed than my own techniques.

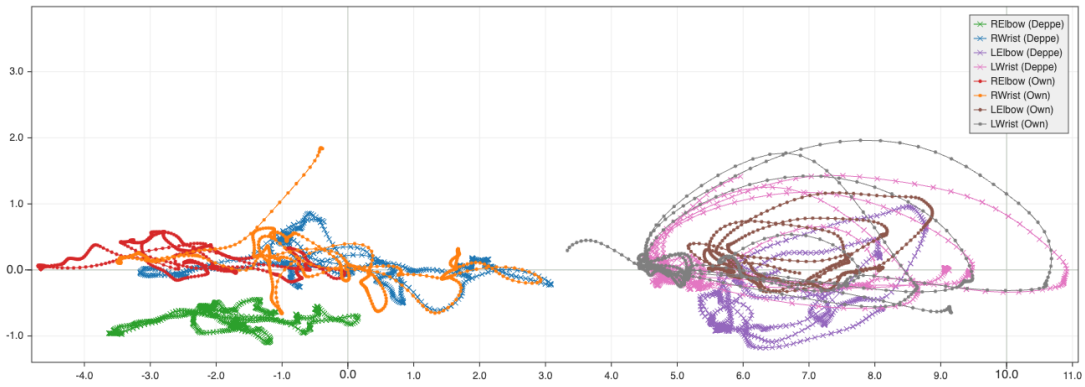


Figure 4.49. Bars 59 to 62 of Chopin's *Grande Polonaise Brillante* Op. 22, averaged comparison of left and right elbows and wrists.

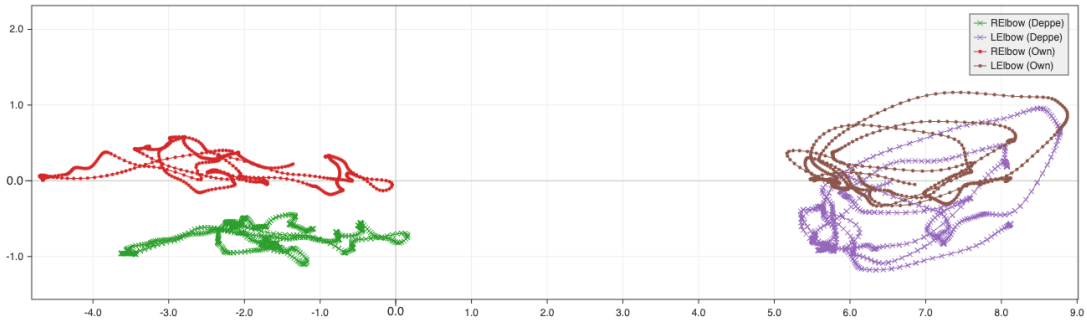


Figure 4.50. Bars 59 to 62 of Chopin's *Grande Polonaise Brillante* Op. 22, averaged comparison of left and right elbows.

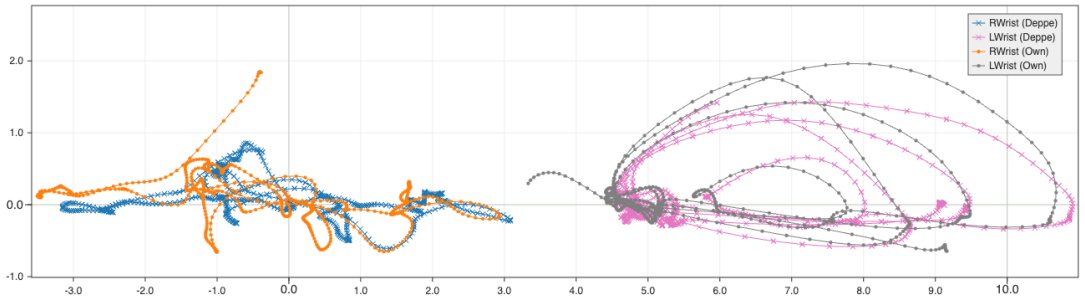


Figure 4.51. Bars 59 to 62 of Chopin's *Grande Polonaise Brillante* Op. 22, averaged comparison of left and right wrists.

According to the above figures, the wrist motion paths using Deppe's techniques were smoother and more vertically compressed compared to the motion paths when using my own techniques. This was due to the lateral movement of the

wrists of Deppe's technique.[23] The effect of Deppe's lower seating position can be seen through the difference in the placement of the elbows where Deppe's motion paths are located lower (see Figure 4.49.). Breaking from the usual trend, the left elbow using Deppe's technique has a slightly larger motion path, which tilts upwards towards the outer edges. When examining the recordings, this unusual trend may be caused by the large leaps of the left-hand chords and the low position of Deppe's techniques. By sitting at a low position, the elbow was naturally placed at a lower position, however, it would need more movement to move the hand across the keyboard especially when there were large leaps. Additionally, with Deppe's approach of using the arm where the shoulder carries it, the whole arm moves as one, and the movement of moving the arm subsequently produces a motion path of the elbow that moves slightly upward. In contrast, the right elbow produces a smaller motion path which can be related to the 'hand rapport' position that was kept when playing the *leggierisimo* section.

Through the motion paths of the wrists, it could be seen that although both right wrist motion paths showed curvilinear movements, my own technique produced a much larger curve, whereas Deppe's technique created a more subtle curve. This is also in line with Deppe's idea that 'the players's mental perception of the curved character of the movement must be very clear and well-defined, yet the consciousness thereof should exist only in himself'.[24] With Deppe's feather-light hand, the two examples below emphasized that Deppe's techniques resulted in lesser attack of the right-hand melody as compared to my own technique. Notes were more

[23] Elisabeth Caland, *Artistic Piano Playing as Taught by Ludwig Deppe Together with Practical Advice on Questions of Technique*, trans. by Evelyn Sutherland Stevenson (G. Schirmer, 1903), p. 46 <https://catalog.hathitrust.org/Record/100340903> [accessed 4 April 2023].
[24] Caland, *Artistic Piano Playing,* p. 37.

articulated and powerful when using my own techniques. This is consistent with Deppe's concept where one should let the fingers fall instead of striking. While this technique of using the feather-light hand leads to a lighter and less articulated touch on a modern piano, it can help us avoid excessive blows on a lighter piano or historical keyboard. When using my own techniques, it was easier for me to give a last 'push' at the end of the *leggierissimo* grace notes around the 2nd and 3rd beat of bar 62, as I did not resist my arm weight and utilized it by pushing it onto the keyboard, creating a subtle *crescendo* effect. However, the same approach was not as effective when using Deppe's techniques as the feather-light hand technique contradicts with the action of 'pushing it (the hand and arm) onto the keyboard'. Instead, it led to a more gentle playing in the *leggiero* section.



Chopin - Polonaise Op. 22, bars 59–62 (Own Technique)



Chopin - Polonaise Op. 22, bars 59–62 (Deppe's Technique)

Example 18. Bars 75 to 80 of Chopin's *Grande Polonaise Brillante* Op. 22.

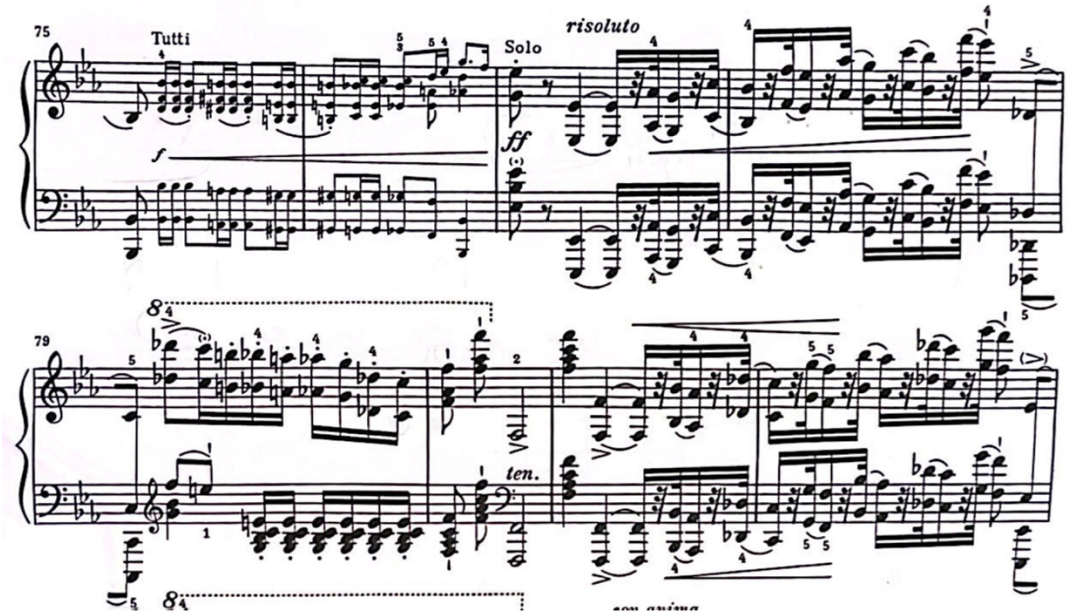


Figure 4.52. Bars 75 to 80 of Chopin's *Grande Polonaise Brillante* Op. 22. (Copyright 1998 G. Henle Verlag, München).

One obvious difference when playing the *forte* and heavy chordal sections was that as I was following Deppe's feather-light hand position, I tried not to exert too much energy and I also avoided pushing the chords downward using my shoulder and back muscles, but rather having my arms hung from the shoulder. However, when using my own techniques, my back leaned forward at times, and I would throw and push my arms into the keys especially at accented chords or downbeats, for example the downbeat to *tutti*, and low E octave chords in the beginning of the *Risoluto* section.

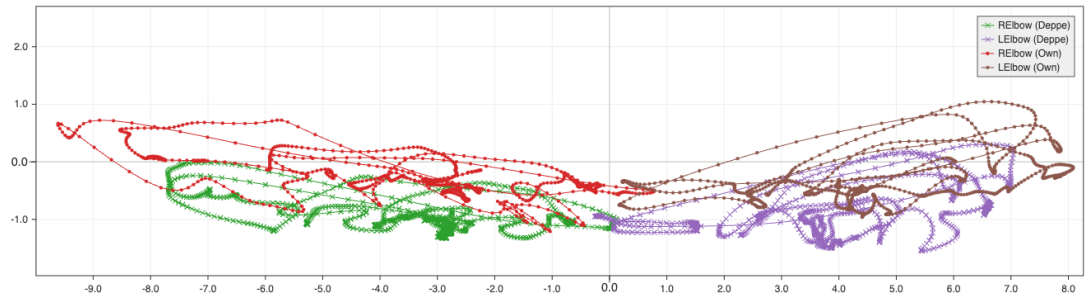


Figure 4.53. Bars 75 to 80 of Chopin's *Grande Polonaise Brillante* Op. 22, averaged comparison of left and right elbows.

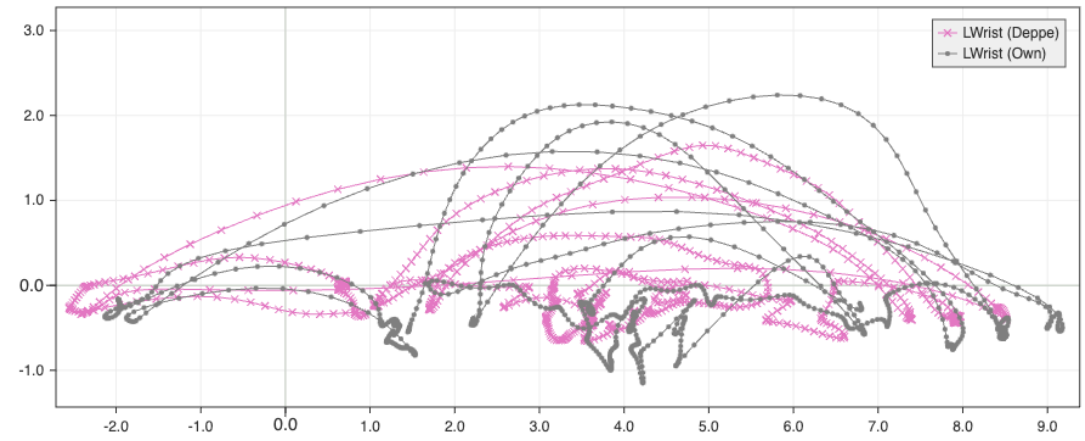


Figure 4.54. Bars 75 to 80 of Chopin's *Grande Polonaise Brillante* Op. 22, averaged comparison of left wrists.

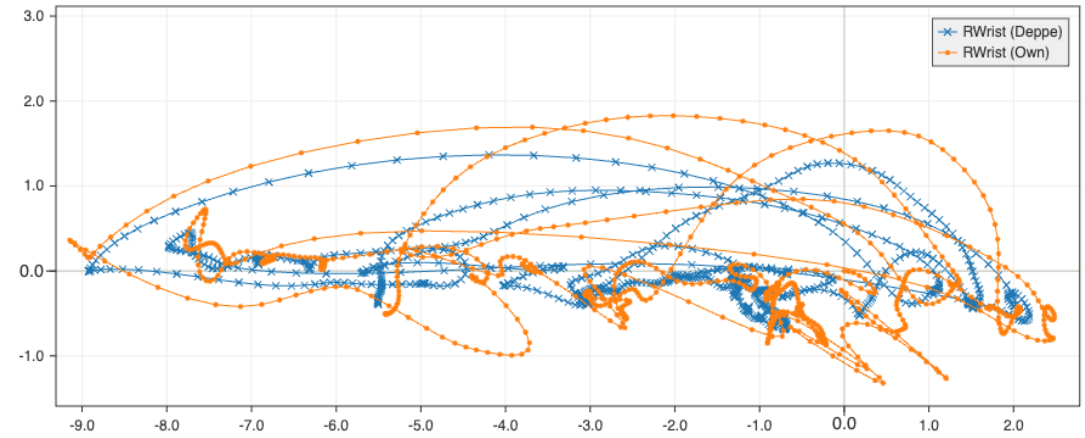


Figure 4.55. Bars 75 to 80 of Chopin's *Grande Polonaise Brillante* Op. 22, averaged comparison of right wrists.

It is clearly shown through the motion paths of the right elbows (see Figure 4.54) that there was a greater fluctuation of motion when using my own techniques.

When playing this phrase with my own technique, my elbow would extend outwards especially when going up to the higher octaves, for example the octave D in bar 79 or the F minor chord in bar 80. When using Deppe's technique, the elbow did not extend as much, as it would need to maintain the position where it is pointed downward, acting as 'the centre of gravity of the arm'.[25] As for the motion paths of the wrists, my own techniques, similar to previous examples, resulted in more vertical curves with more sudden changes in direction, while the curves using Deppe's techniques were flatter. The flattened arc of Deppe's wrist movement were more balanced and smoother in comparison.

While practicing these techniques, I noted some related questions that arose — 'does this make the hands feel lighter?', 'did it sound lighter?', or 'would the audience perceive it as being lighter?'. Referring to the Example 17 where slightly lighter or more flowing tones could be heard from the recordings using Deppe's techniques (on the right hand part, especially when quintuplets and grace notes were played), a similar result can also be seen in this example and in Example 19 as well, which affirms the difference in tone. This chordal passage shows the difference in tone colour and the capabilities of the piano. When using Deppe's technique, we can easily hear the timbre which is not yet at the maximum capabilities of the modern piano, but with lighter, simpler, and clearer tone colour of the chords. Conversely, my own techniques gave a more thunderous demonstration of the chords through the use of the momentum of the hand, along with large throwing movements, utilising the *fortissimo* range of the piano. While Deppe's techniques may not reach the full potential of a *ff* chord on a modern piano, it may be more than sufficient for a

[25] Caland, *Artistic Piano Playing,* p. 40.

nineteenth-century piano. According to Gonzalez-Sanchez and others, motion features such as the overall energy level, motion amplitude, acceleration, or jerk, would also influence the resulting sound.[26] In this example, the link between hand movement and the resulting sound can be clearly observed. Apart from the difference in dynamics, it can be heard that Deppe's technique produced a more direct outcome that was rhythmically more even, reflecting in its smoother motion path. My own technique, by contrast, resulted in some rhythmic fluctuations, exhibiting traces of the rather jagged and uneven movements of the hands.



Chopin - Polonaise Op. 22, bars 75–80 (Own Technique)



Chopin - Polonaise Op. 22, bars 75–80 (Deppe's Technique)

[26] V. Gonzalez-Sanchez and others, 'Characterizing movement fluency in musical performance: toward a generic measure for technology enhanced learning, *Front. Psychol.,* 10.84 (2019), doi:10.3389/fpsyg.2019.00084, cited in Rolf Inge Godøy, 'Motion shapes for sound shaping', *Frontiers in Psychology*, 15 (2024), pp. 1–5 (p. 3), doi:10.3389/fpsyg.2024.1449021.

Example 19. Bars 17 to 24 of Chopin's *Grande Polonaise Brillante* Op. 22.



Figure 4.56. Bars 17 to 24 of Chopin's *Grande Polonaise Brillante* Op. 22. (Copyright 1998 G. Henle Verlag, München).

This musical example showed the most distinctive difference between my own techniques and Deppe's techniques. In playing this section where the right hand carries the main melody, my technique uses some circular motions in the wrist and the elbow for long notes, such as the starting note. Furthermore, the elbow position when using my own techniques was clearly extended further than using Deppe's techniques. Below is my account through the self-reflection log from 28th Nov 2022:

> The arm is carrying the hand, and the hand, the fingers, therefore, it sounded more flowing, looser, and lighter. The downward and outward movement was quite subtle, which was not surprising as it aligns with Deppe's concept that it

should be clear to the pianist mentally, but not quite obvious for the audience. Making the outer side of the hand straight, producing a right angle, is quite a challenge at first. But as I try it more, I could link this movement to the movement where one turns the hand and elbow towards the outer side so that it would help the 3rd, 4th and 5th finger in gaining more strength when using those fingers. Similarly or coincidentally, raising the outer side of the hand and placing the hand and arm at a right angle against the keyboard as Deppe instructed was also to provide a rapport as I remember Caland's words 'fourth and fifth finger […] stretched diagonally across them [key] – suffers a proportionate loss of freedom and of power'.[27]

While practicing Deppe's movements, I find myself frequently raising the elbow outwards– which was against his instructions. When raising the wrist and playing with his instructions, I couldn't help but raise my elbow to compensate for these unusual instructions. However, keeping the elbow near to the body would be limiting for me especially when I was also trying to keep the outer part of the hand straight.

[27] Caland, *Artistic Piano Playing,* p. 28.

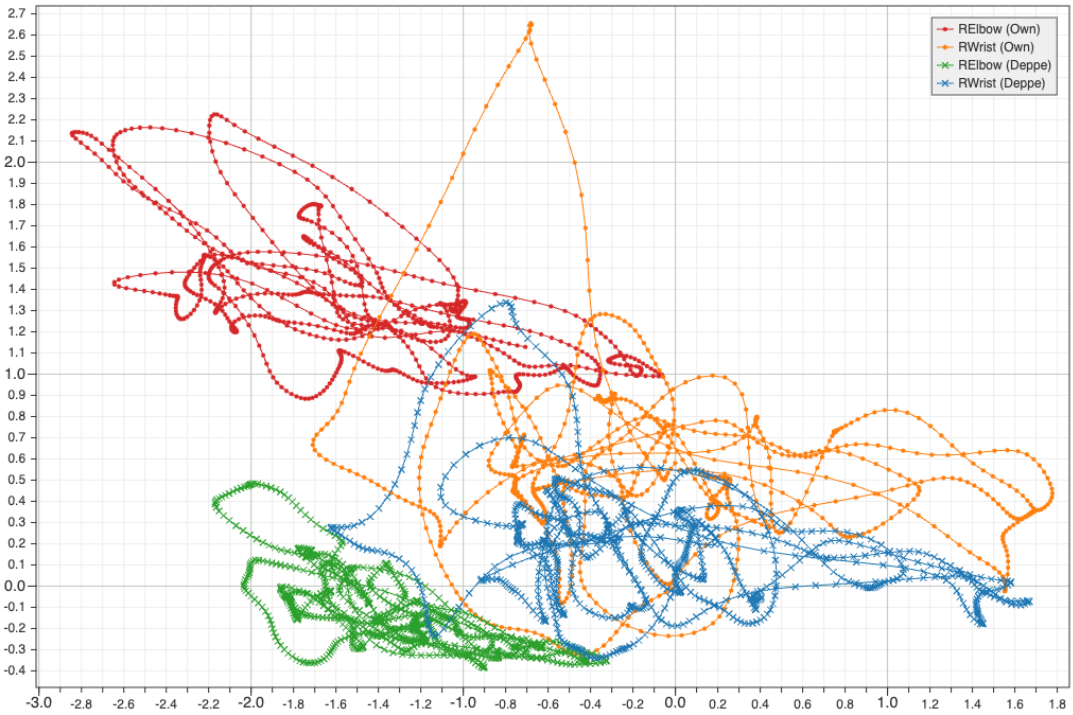


Figure 4.57. Bars 17 to 24 of Chopin's *Grande Polonaise Brillante* Op. 22, averaged comparison of right wrists and elbows.

Therefore, the motion paths not only showed a larger movement in both the right wrist and elbow when using my own techniques, the relative position of the wrist and the elbow were also very different when using the two different techniques. The relative position of the wrist from the elbow were much closer when using Deppe's techniques while they were further apart with my techniques. This is because Deppe's hand and elbow position required that I lift the fifth finger and turn the hand inwards to create a straight line from the middle finger to the elbow, in addition to his emphasis on keeping the elbow near to the body. Not only that, when using my own technique, my elbow position was higher than my wrist; while in using Deppe's technique, my elbow position was lower than my wrist due to the low seating position.

It also has a clear difference in terms of the sound produced. Only by alternating the positions of the hand using Deppe's technique, it would provide a contrasting rendition of the same phrase. The first note of the right-hand part (G in bar 17) gave a bright and sharp tone using my own technique, but when using Deppe's technique, it was slightly mellower, yet firm and clear. Another clear difference between the two approaches was especially evident in the triplet sections of bars 17 and 21. While my own techniques produced the triplet notes in a clear, semi-detached manner, Deppe's technique affected the touch, making the execution of the triplets slightly faster in tempo, which resulted in a less articulated, but flourished group of notes, sounding livelier and with more momentum. While both attempts were played using an almost identical method of expressing and phrasing the music, the change in one variable — the technique — affected the outcome considerably. The phrasing flows fluently with my own technique, especially with some hand movements incorporated at the start and end of the phrases to help shape them. Deppe's technique, by contrast, showed directness and simplicity without excessive movements. This example also demonstrated the difference in the effect of my curvilinear movements on the phrasing as previously mentioned in my reflection log in Chapter 3.4.4 . Deppe's concept of 'curvilinear movement' is quite subtle compared to the more modern approach and is mostly seen in the hand and the wrist, which becomes more obvious when the last three fingers are in use. The hand movements that I use, by contrast, involve the whole arm including the hand and elbow, and could be incorporated no matter which finger was in use, hence the difference in phrasing as noted above. In this example, the link between movement and sound can again be seen and heard in the tempo. When using my technique involving larger movements and more vertical action of the fingers, each note was

clearly articulated and thus the overall tempo was slower, with movements such as elbow extension, circular wrist motion, and hand lifts clearly visible especially on longer notes. These movements of my technique were in concert with the tempo used. On the other hand, Deppe's lighter technique of the natural falling fingers consists of smaller actions which produces delicate and quick touches. When combined with the absence of extraneous movements, it results in a slightly quicker overall tempo.



Chopin - Polonaise Op. 22, bars 17–24 (Own Technique)



Chopin - Polonaise Op. 22, bars 17–24 (Deppe's Technique)

Example 20. Bars 43 to 47 of Chopin's *Grande Polonaise Brillante* Op. 22.



Figure 4.58. Bars 43 to 47 of Chopin's *Grande Polonaise Brillante* Op. 22. (Copyright 1998 G. Henle Verlag, München).

When using Deppe's techniques, the bounces used for the slurs in bar 43 were executed mostly using the wrists, without the arm moving too much. While the wrists can also be seen bouncing after the slurs using my own techniques, the elbow and arm were also involved in the movement. This musical example showcased an alternative approach to the short, slurred passage and the *leggiero* right-hand section. My own approach involved the wrist in executing slurs with a slight use of the hand, while Deppe's technique is an approach where the hand hangs from above. This demonstrated that although Deppe called for curvilinear movements and encouraged the use of the arm, they carry different meanings from what we know today, and that the actual execution of the techniques were different. The rapport position was again maintained when playing this short excerpt with Deppe's technique, both at the slurs

and at the running semiquaver triplets' passage as the 3rd, 4th and 5th fingers were used constantly. Also, in this phrase, the fifth finger position that was slightly raised was also kept, leading to less rotation of the wrists in the running passage.

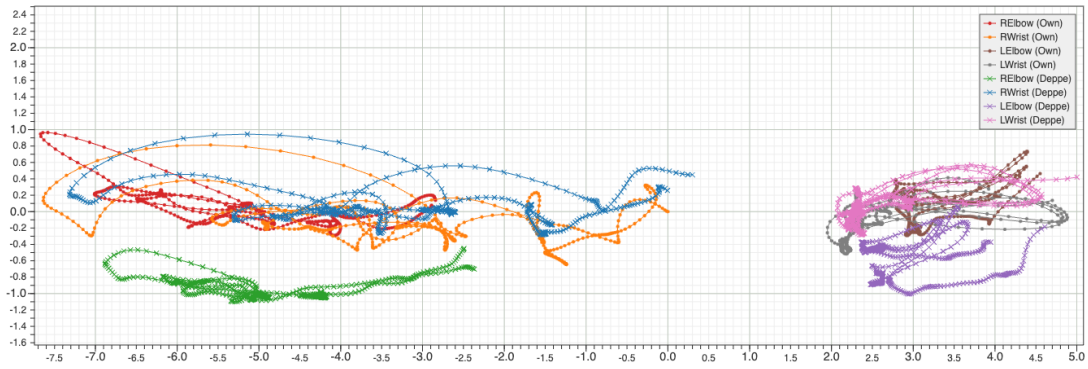


Figure 4.59. Bars 43 to 47 of Chopin's *Grande Polonaise Brillante* Op. 22, averaged comparison of left and right wrists and elbows.

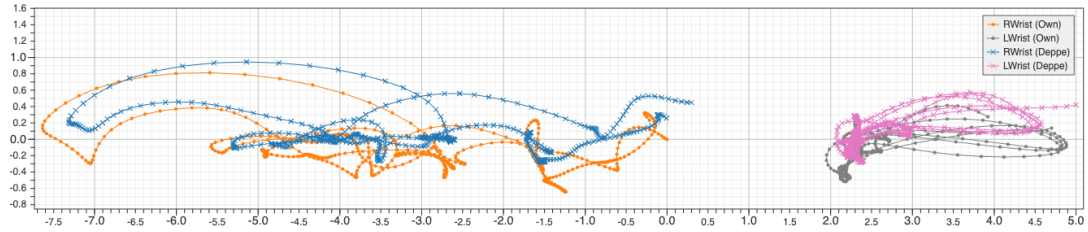


Figure 4.60. Bars 43 to 47 of Chopin's *Grande Polonaise Brillante* Op. 22, averaged comparison of left and right wrists.

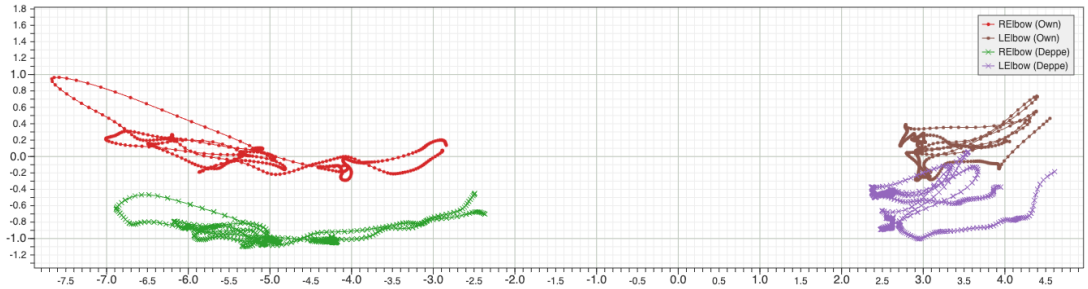


Figure 4.61. Bars 43 to 47 of Chopin's *Grande Polonaise Brillante* Op. 22, averaged comparison of left and right elbows.

Deppe's posture, which already placed the wrist in an elevated position, did not lift the hand very high when moving an octave higher after each set of slurs. On the other hand, using my own technique, I lifted my wrist and forearm altogether for the slurs which was reflected in the motion paths of the wrist and elbow.

As for the motion paths of the elbows, similar to Example 17, the lowly positioned elbow on the left hand needed more movement to play the leaps in the left-hand part. However, the right elbow did not lift as much compared to using my own techniques. This is because the elbows were not extended outwards when using Deppe's techniques but rather kept a straight line from the elbow to the outer part of the hand. Caland noted that the elbow needed to be 'kept as near to the body as may be' as 'conspicuous activity will effect a radical change in the correct hand and arm position… (and) destroy the sense of repose and harmony'.[28] While it was strictly noted for Deppe's techniques, the extension of the elbow was not a limitation for my technique, thus the difference in motion paths. The relative position of the left elbow and wrist in Figure 4.59. was another noticeable difference. According to the motion paths, the left elbow using Deppe's techniques was located lower than the left wrist, showing Deppe's posture with a low seating position and thus the lowly positioned elbow. However, in the motion paths of using my own techniques, the left elbow and the left wrist was almost at the same height with the elbow extending outwards. The extension of the elbow was present in my own techniques. As a twenty-first-century performer who was not taught about restrictions in elbow movements, it was a difficult task to keep the elbow passive, near the body, while also keeping it a straight line to the side of the hand. This also resonated with input written in my self-reflection log after a practice session on the 25th of October 2022:

> One major difference between my own techniques and Deppe's is that I would play my fifth finger on the keyboard using the outer side of the finger.

[28] Caland, *Artistic Piano Playing,* p. 40.

However, Deppe's instruction specifically asked for the outer side of the hand to be raised and kept in a straight line from the hand to the forearm, as this 'gives independence and equality of power' to the fingers.[29] I feel like this is also a preparation for the curvilinear movement that was explained in joining the tones in the chapter three of Caland's book. Anyway, when doing this, I was unsure where to place my elbow as putting it as close to the body as possible as Deppe said would make it difficult for the wrist as it would need to turn a great deal until the outer part of the hand makes a straight line. According to Caland's illustration of the hand posture, the forearm was also straight. Therefore, I think the elbow is not too far out, but it is not too near to the body as well. I used the straight line of my forearm and fifth finger as the landmark to follow in this case. However, it was not easy to maintain. I find myself always going back to my own hand position where my fifth finger would not be 'parallel to the keys and would stretch diagonally across the key'[30] exactly as Deppe warned in his book.

Through the two recordings below a subtle difference can be observed. A slightly more effective *crescendo* can be heard using my own techniques in the slurred passage in bar 43 and a louder *leggiero* passage can be heard from bars 44 to 46. Deppe's technique also achieved a comparable outcome. While the slurs were played in a more lifted manner, the right hand produced a slightly more *leggiero* touch from bars 44 to 46 due to the wrist being in a more elevated position, even though both recordings employed mostly the fingers in playing this section. While the difference in outcome was subtle, it was still noticeable where Deppe's elevated

[29] Caland, *Artistic Piano Playing,* p. 28.
[30] Caland, *Artistic Piano Playing,* p. 28.

wrist produced a lighter touch in general and would be a sound solution to pianists who would like to achieve a more effortless tone colour.



Chopin - Polonaise Op. 22, bars 43–47 (Own Technique)



Chopin - Polonaise Op. 22, bars 43–47 (Deppe's Technique)

This section demonstrated the entangled connections between physical movements, technical instructions, and the musical outcomes of Deppe's techniques on a modern piano. Through the instructions of Deppe's students, the application and embodiment of these techniques and their effects in piano playing, it is safe to say that the concepts used by Deppe in employing the hand and arm in piano playing were quite different from many approaches that are commonly used today. For instance, while the use of the arm in my own technique relies on exerting force through the arms and their weights into the piano using mostly a pushing action that

comes from the shoulder, torso or even the seating position, Deppe's use of the hand involves hanging of the hand from the wrist, and the arm from the shoulder, which is quite the opposite in terms of the piano playing mechanism from my own techniques, even though both approaches used the arms. The passive position of the elbow and the regulatory position of the hand also directly affects the movements of the pianist, resulting in a more reserved way of moving the arms and hands compared to the modern definition. They also pose some restrictions on a modern piano equipped with heavier keys as compared to historical pianos. Nevertheless, the findings discovered through this study provided a glimpse into the exploration of using larger joints and other parts of the hand and arm in the nineteenth century, while the attempt on Deppe's techniques presented new experiences that would allow modern pianists to go beyond our usual perspectives and experience a different way of approaching the piano.

4.5 Observations and insights

As many of these techniques were mainly instructions in terms of texts and simple illustrations, the instructions gained from researching these historical techniques were primarily my own interpretations as a performer, and the application of these techniques were subjective to my own unique experience. Nevertheless, I outlined my preliminary exploration of the selected studied techniques through several musical examples from different pieces, providing more tangible representations of the movements involved using graphs of motion paths, video recordings and reflection logs. These experiences with video recordings show the transformation of my playing when a technique is employed, providing a preliminary understanding of using the researched techniques. On the other hand, the personal dimension of the observations while using these techniques help to provide some rationale behind these techniques when in use.

Through the applications above, many of the examples demonstrated the use of hand lifts or hand movements at the end of a phrase or between phrases. Jane Davidson mentioned that the structural features of the music enable the body to input expressive intentions in a clear manner. For example, during rests or *rubato* sections, the hands are allowed the time to produce expressive movements that it wouldn't otherwise be able to.[31] Davidson also observed that expressive movements of the hands only occur when a 'space' — such as rests or held notes — is present in the

[31] Jane W. Davidson, 'Qualitative insights into the use of expressive body movement in solo piano performance: a case study approach', *Psychology of Music*, 35.3 (2007), pp. 381–401 (p. 385), doi:10.1177/0305735607072652.

structure, enabling movements to be executed. However, different intention of the movement could be expressed through various types of hand movements.[32]

When executing through different sets of historical techniques and those of my own in the above musical examples, they were played with the same intentions in mind. However, through the motion paths presented, it can be established that historical techniques produce smaller movements in general. This outcome of using different techniques then also presented differences in both the audio and visual aspects of playing the piano. Through this, the intention that was kept the same seemed to be altered through body movements when playing. This is because the amplitude of the movements could be the main determinant in studying expressive intentions.[33] In discussing the swinging movements between an expressive and deadpan performance, Davidson mentioned that it is possible for the expression to always be present in the body, however, the difference was that the movements were not 'exteriorized' in a deadpan performance.[34] In the case of using historical techniques that produces only small and subtle movements, some intentions, for example phrasing, that are at times more subtly conveyed through movements were instead experienced more internally. At the same time, these techniques introduced alternative ways of playing, allowing us to focus more on the production of tone, the connection between notes, sensitivity, and control, leading to other forms of expressive approaches.

[32] Davidson, 'Qualitative insights into the use of expressive body movement in solo piano performance', p. 395.
[33] Davidson, 'Qualitative insights into the use of expressive body movement in solo piano performance', pp. 385–86.
[34] Ibid., pp. 385–86.

Trends, patterns, and characteristics of the techniques also begin to present themselves. In terms of movements, all four techniques use subtle movements, where Hummel instructed to play with lightness, Czerny asked for still arms and perpendicular fingers, Leschetizky used wrist movements, while 'light as feather' and 'simple and rounded movements' were fundamental to Deppe's hand techniques. These terms showcased the characteristics of these historical techniques, provided insights into the underlying concepts and the aesthetic values it brings to the music, even on a modern piano.

A common theme of restrictions in body movement can also be seen. This can be observed since Mozart's time when he discussed the performance of Stein's daughter in his letter to his father, complaining that she moved around, made grimaces, and played heavily and clumsily,[35] as mentioned in Chapter 2.3.3 . It was understandable that limiting body movements in playing was crucial in a performance due to the delicate mechanisms of the instruments of the time. As the instruments evolved and became sturdier and more robust, a wider dynamic range could also be achieved, while the keys became less prone to thumps, and could withstand slightly larger forces. In response, new concepts in techniques — for example, those used to complement *cantilena* melody lines — can be observed, and techniques that employ more body parts such as the wrist or the shoulder, were also introduced. While some instructions such as tranquil arm are not used anymore in the late-nineteenth century, the method books and treatises on Deppe's and Leschetizky's

[35] Wolfgang Amadeus Mozart, 0355 letter to his father, Salzburg, 23–25 October 1777, in *Digital Mozart Edition,* <https://dme.mozarteum.at/DME/briefe/letter.php?mid=919> [accessed 26 January 2024].

techniques still hinted at the notion of maintaining limited hand movements and expressed their disfavour for extraneous movements.

In discussing the evolution of keyboard playing, Alan Davison urged his readers to compare Liszt and his contemporaries' innovations with the 'quiet arms, finger only' school.[36] Davison, through Liszt's iconography, stated that he was usually seated high in relation to the keyboard, and that this position would lead to raising his forearms and elbows above the keyboard, allowing more force to be used, especially from the upper body.[37] He further mentioned that although there were instances where he sat on a lower chair, it was usually in a photographer's studio where the chair is a part of the prop.[38] However, according to William Mason, he learned indirectly from Liszt's students — either Karl Klindworth or Dionys Pruckner, that Liszt acknowledged his touch was not an ideal model for students to follow, where he said:

> You are to learn all you can from my playing, relating to conception, style, phrasing, etc., but do not imitate my touch, which, I am well aware, is not a good model to follow. In early years I was not patient enough to 'make haste slowly' — thoroughly to develop in an orderly, logical, and progressive way. I was impatient for immediate results, and took short cuts, so to speak, and jumped through sheer force of will to the goal of my ambition. I wish now that I had progressed by logical steps instead of by leaps.[39]

[36] Alan Davison, 'Franz Liszt and the Development of 19th-Century Pianism: A Re-Reading of the Evidence', *The Musical Times,* 147.1896 (2006), pp. 33–43 (p. 36), doi:10.2307/25434402.
[37] Ibid., p. 37.
[38] Ibid.
[39] William Mason, *Memories of a Musical Life* (The Century Co., 1901), p. 114.

In another case, an Austrian pianist, Leopold de Meyer (1816-1883) who studied with Carl Czerny and François Schubert, was also documented to have used forceful techniques during his two-season tour in the United States from 1845 to 1847.[40] De Meyer's 'fanciful caricatures' were widespread (see Figure 4.62 for reference), and had 'eccentric mannerisms at the piano'.[41] As an exhilarating performer, he was described 'pouncing on the keys like a lion on the reeds of a jungle; and shaking the notes from his paws like drops of water.'[42] In response to his performances, he was depicted to be 'too ferocious, too theatrical' by a New Orleans critic.[43] A. N. Johnson, an associate of Lowell Mason and editor of the *Boston Musical Gazette*, described him as 'really a great performer', but he was offended by de Meyer's behaviour on stage, where he commented: 'It seemed to us that if, immediately after striking the last chord of the piece, he had turned a summerset over the piano, it would have been in perfect keeping with the performance'.[44] William Mason, an American pianist, who claimed that he learned through watching de Meyer's performances in the United States, said: 'I never missed an opportunity of hearing him play, and closely watched his movements, and particularly the motions of hand, arm, and shoulder'.[45] De Meyer's performances also led to different reviews from two papers in Rochester. One thought that de Meyer's performance is

[40] R. Allen Lott, *From Paris to Peoria: How European Piano Virtuosos Brought Classical Music to the American Heartland* (Oxford University Press, 2003), p. 11.
[41] Lott, *From Paris to Peoria*, p. 20.
[42] *Life of Henrv Wadsworth Longfellow: with Extracts from His Journals and Correspondence*, ed. by Samuel Longfellow, 3 vols (Ticknor and Company, 1886; reprint ed., Houghton, Mifflin and Company, 1891), II, p. 60, cited in R. Allen Lott, 'The American Concert Tours of Leopold De Meyer, Henri Herz, and Sigismond Thalberg', (unpublished doctoral dissertation, City University of New York, 1986), p. 62 <https://may.idm.oclc.org/login?url=https://www.proquest.com/dissertations-theses/american-concert-tours-leopold-de-meyer-henri/docview/303461487/se-2?accountid=12309> [accessed 20 January 2025].
[43] NODP (1846), cited in Lott, *From Paris to Peoria*, p. 21.
[44] A. N. Johnson, *The Musical Gazette* 1(1846), p. 165, cited in Lott, *From Paris to Peoria*, p. 21.
[45] Mason, *Memories of a Musical Life,* pp. 19–20.

disrespectful, while another thought that 'the ladies … found it interesting'.[46] While some writers commented that they did not observe any unusual performances from de Meyer, a critic suggested that he intentionally employed the exaggerated performing styles to appeal to the American audiences, the critic also noted that he remembered hearing de Meyer in Europe where he 'did not … mingle much tomfoolery with his performance'.[47] The backlash where many of the reviews did not agree on what de Meyer did with his performances showed that the use of large body movements for showmanship as well as bold or daring techniques, were not yet fully accepted by the society in the mid-nineteenth century.



Figure 4.62. Leopold de Meyer's Meyer-Polka sheet music cover (Music Division, The New York Public Library, Astor, Lenox and Tilden Foundations)
Taken from *From Paris to Peoria: How European Piano Virtuosos Brought Classical Music to the American Heartland*, p. 21.

[46] Pittsburgh Daily Commercial Journal (1846), cited in R. Allen Lott, 'The American Concert Tours of Leopold De Meyer, Henri Herz, and Sigismond Thalberg', p. 61.
[47] *The Musical Gazette* 1(1846), p. 173, cited in Lott, *From Paris to Peoria*, pp. 21–22.

Contrastingly, present day piano playing has more involvement of body movements. Many of these movements were used to communicate expressive intensions, communicate with the audience, signal extramusical concerns, or to show off to the audience.[48] In a study, Davidson identified nine distinctive and repeated movements in the left hand and six distinctive types of upper torso or head movement at expressive locations of the Beethoven Bagatelle performance through observing a video recording of a male professional pianist with an international performing career.[49] The noted movements included 'nod', 'shake of the head', 'forward and backward swing', 'wrist rotation, depressed wrist, upward wrist movement', 'high hand lifts', and many more. While many of these were not mentioned in historical techniques, these movements are commonly seen in present day piano performances.

Perhaps this can also be attributed to the current aesthetic values. According to Davidson, a study suggested that the more expressive a piece is, the broader and more expansive the movements become.[50] Conversely, with less expressive intent, the movements are smaller and more restrained. To place it in the context of techniques that focuses on the efficacy of playing movements, pianists continued to produce large movements in their performances even on an especially composed

[48] Jane W. Davidson and Jorge Salgado Correia, 'Body Movement', in *The Science & Psychology of Music Performance: Creative Strategies for Teaching and Learning*, ed. by Richard Parncutt and Gary E. McPherson (Oxford University Press, 2002), pp. 237–250 (pp. 244–245), doi:10.1093/acprof:oso/9780195138108.003.0015.
[49] Davidson, 'Qualitative insights into the use of expressive body movement in solo piano performance', p. 390–91.
[50] Jane W. Davidson, 'Movement and Collaboration in Musical Performance', in *The Oxford Handbook of Music Psychology*, ed. by Susan Hallam, Ian Cross and Michael Thaut (Oxford University Press, 2009), pp. 364–76 (p. 366), <https://archive.org/details/oxfordhandbookof0000unse_e7u2/page/n5/mode/2up> [accessed 16 November 2024].

piece that has a small range of two octaves.[51] A recent study by Nadia Moura and others who studied the perception of performer's motion also concluded that the sample group with minimal movement degree had the lowest score, which further implies that performances with less motion were seen as less expressive regardless of musical style.[52]

Although the above studies were mainly the perspective of a listener or the audience; from the perspective of a performer, pianists performing experiences are subjective to each pianist as each of us may be using a different set of techniques and playing approaches, and it is an aspect that is highly individualised for each pianist. Technique is developed little by little through years of practice and is influenced by many factors such as backgrounds, hand and body characteristics, learning environment, teaching styles, technique lineage, instruments used, and many more. Hence, even though my techniques were learned in the twenty-first century, they may not be the same as the techniques used by all other pianists today. In fact, even successful performers have their own unique approaches to piano playing, just as Wayne Johnson said, 'Many of the most effective and memorable performing artists have had some rather unorthodox approaches, at least by contemporary pedagogical standards',[53] but their playing still leave listeners in awe. To offer a few examples included by Wayne, flat fingers were sometimes used by Vladimir Horowitz, the low

[51] Jane W. Davidson, and Jeremy C. Dawson. 'The development of expression in body movement during learning in piano performance', *Conference Proceedings of Music Perception and Cognition Conference*, (1995), p. 31, cited in Davidson, 'Movement and Collaboration in Musical Performance', p. 367.
[52] Nadia Moura and others, 'Increased body movement equals better performance? Not always! Musical style determines motion degree perceived as optimal in music performance', *Psychological Research,* 88 (2024), pp. 1314–30 (p. 1325), doi:10.1007/s00426-024-01928-x.
[53] Wayne Johnson, 'When Artistry Embraces Technique', *The American Music Teacher,* 57.5 (2008), pp. 23–25, <https://may.idm.oclc.org/login?url=https://www.proquest.com/trade-journals/when-artistry-embraces-technique/docview/217490605/se-2?accountid=12309> [accessed on 16 November 2024].

seat position by Glenn Gould, the closeness of Shura Cherkassky's seat to the piano, Brahms's posture of leaning backwards while using straight forearms, and Lang Lang who displayed significant physical gestures.[54] Therefore, this research does not intend to generalize my techniques as those employed by all pianists in the twenty-first century. In contrary, the use of my own techniques in this chapter is rather, to present the difference in outcomes of the researched techniques through comparison with my personal approach on the modern grand piano, and at the same time, demonstrate the entangled connections between physical movements and sound produced, as well as present to readers the differences in concepts of the selected pedagogues in practice.

Another issue noticed through the musical examples above was that, some historical techniques pose restrictions on a modern piano that is equipped with heavier keys compared to historical pianos. This can be further observed through the connection between the instruments and techniques that Stephen Hough noted. He mentioned that pianists who developed their techniques on European pianos found the Steinway to be a challenge as they relied on the 'horizontal motion' of the hands to create tonal control and colours on feather-light keys, which are different from instruments with heavier keys that required more vertical pressure.[55] For instance, Moritz Rosenthal, a pupil of Liszt, claimed that he was unable to attain the same result from his trademark of 'fast and fleet figuration that leverages extremely soft dynamics' on the Steinway.[56] Some examples of this chapter also demonstrated a somewhat similar issue. While these techniques can serve as inspirations and inform

[54] Ibid.
[55] Stephen Hough, *Rough Ideas: Reflections on Music and More* (Farrar, Straus and Giroux, 2020), p. 67.
[56] Ibid.

us of historical techniques, the modern piano may be too heavy for some of the techniques.

While the above subchapters demonstrated a preliminary exploration of the researched techniques through musical examples, it is crucial to keep in mind that they were applied on modern piano. There are large differences between nineteenth-century fortepiano and the modern piano. As such, the results might differ on a fortepiano when the same researched techniques are applied, potentially changing the performer's perspective. Puzzling concepts and unclear notions that were not easily solved on a modern piano may reveal itself on the appropriate instrument due to the suitability and compatibility with the researched techniques. Consequently, the following chapter focuses on the embodiment experience of these researched techniques on various historical fortepianos I had opportunity to use in the duration of my PhD. While motion paths are not included in the following subchapter, reflection logs and videos would still be a major element.

Chapter 5 Reimagining the Use of Nineteenth-Century Techniques on Historical Piano

The difference in embodiment experience when transitioning from one piano to another is highly complex, not to mention the transition from a modern piano to a nineteenth-century historical piano. Therefore, it is crucial to address how the researched historical techniques react on historical instruments. The modern piano is very different from its historical counterparts such as the fortepiano, and only applying it on modern instrument could make it more challenging for a modern pianist to understand the techniques from the nineteenth century.

Donna Louise Gunn mentioned, 'when most people speak of the piano, they envision a very specific sort of instrument: the modern piano […] Not so with eighteenth-century pianos.'[1] I, too, as a modern pianist, initially held the same perspective. This contributed to why the preliminary exploration into the researched techniques were first performed on the modern piano with the aim of observing the effect or usability of these techniques on the main instrument of the performer (myself). However, according to Gunn, the first goal when 'trying to learn from the past to inform the future', is to 'understand the instrument for which the music was intended'.[2] Therefore, historical instruments should be one's starting point as she described it as 'the appropriate "jumping off" place'.[3]

[1] Donna Louise Gunn, *Discoveries from the Fortepiano: A Manual for Beginning and Seasoned Performers* (New York: Oxford University Press, 2015), p. 14.
[2] Gunn, *Discoveries from the Fortepiano*, pp. 9–14.
[3] Ibid.

By reimagining these researched techniques on the appropriate historical instruments, it may bring modern pianists closer to their origins, and hopefully help develop a better understanding towards the potential roles and impacts of these techniques, recognize the connections between instruments and techniques, as well as provide an opportunity to observe their influence on my playing as a pianist-researcher on both the modern piano and historical piano. As a modern pianist without prior experience with historical instruments, this subchapter will discuss the process of transitioning from the modern piano to historical piano using experiences I accumulated during the course of my PhD.

5.1 The Pianist and the Piano

A pianist can feel the difference in touch and tone when playing on different pianos, for example, a Yamaha feels lighter and brighter, while a Kawai can at times feel slightly heavier and more muffled in comparison. As a performer, I can also feel the increased effort when performing on a concert-length Steinway Grand Piano and the difference in energy I need to put into the playing compared to an upright piano mostly used for practice. The difference in embodiment when transitioning from a modern piano to a historical piano is even more exaggerated. Doğantan-Dack, when discussing the issue that situates the piano as an artistic collaborator, said:

> The embodiment relationship between a pianist and her instrument is highly complex and existing theoretical frameworks do not fully capture this complexity…a pianist cannot *directly and immediately* transfer the kinaesthetic-tactile knowledge and image of a piece of music that she has

acquired on one specific piano onto another piano, and achieve the expressive results she intends.[4]

She further stated that the 'transfer' from one piano to another would require 'a process of learning to embody each new piano'.[5] Following this theory, the need for a process of embodiment would be even more evident from a modern piano to a historical keyboard instrument.

A modern piano from the twenty-first century is very different from the keyboard instruments from the eighteenth and nineteenth centuries such as the fortepiano. When studying the different piano techniques from nineteenth century, the main research question that arises from my research is 'Will attempting nineteenth-century techniques on a historical piano provide a different response than on a modern piano?', this then led to other questions such as 'Will they reveal the relationship between historical instruments and the techniques?', 'What new perspectives or knowledge will this experience bring?', and 'How does this knowledge help a twenty-first century pianist's experience on a historical piano?'. Through my experience, I believe anyone who knows how to play the piano can play a fortepiano and will be able to operate the historical instruments. However, the techniques and playing approaches of a modern pianist cannot be applied directly and interchangeably onto a historical instrument. Transitioning from a modern piano to a historical instrument may not be as easy as switching the sound of a digital piano

[4] Mine Doğantan-Dack, 'The Piano as Artistic Collaborator', in *Rethinking the Musical Instrument* (Cambridge Scholars Publishing, 2022), pp. 1–19 (p. 9) <https://www.researchgate.net/publication/358369084_The_Piano_as_Artistic_Collaborator> [accessed 10 November 2023].
[5] Doğantan-Dack, 'The Piano as Artistic Collaborator', p. 9.

from a ‘grand piano’ to a ‘harpsichord’, in part due to the techniques learnt on the modern piano. The embodiment of transitioning from a modern piano to an older piano would force us to go back in time where a modern pianist, used to the weight and the reinforced keys of a modern grand piano, would suddenly need to disregard years of training of using more force of the body, and adapt to the total opposite, much lighter playing method.

The techniques of the nineteenth century passed down through treatises convey relevant information for modern pianists who lack experience on historical instruments. While some of these techniques were not easily understood by modern pianists, understanding historical instruments and examining one’s artistic experience of the embodiment of nineteenth-century techniques on historical piano would help us gain more insight into how it may have looked and felt like for nineteenth century contemporaries to use these techniques, how the techniques react on a historical piano, as well as understanding why they were adopted in nineteenth century. Just as Taruskin said:

> Experiments based on historical research serve the purpose for performers to: open their minds and ears to new experiences, and enable them to transcend their habitual, and therefore, unconsidered, ways of hearing and thinking about the music […]. The object is not to duplicate the sounds of the past, for if that were our aim we should never know whether we had succeeded. What we are aiming at, rather, is the startling shock of newness, of immediacy, the sense of rightness that occurs when after countless frustrating experiments we

feel as though we have achieved the identification of performance style with the demands of the music.[6]

In this case, instead of blindly following and duplicating the approaches used without even knowing if the reconstructed approaches are accurate, the more important goal is to experiment with these techniques, gain experience in using the researched techniques on an appropriate instrument and to examine the new relationships and knowledge that arise through the practice, such as how these techniques would affect one's playing. While modern pianists have a different approach in playing the modern piano and may not agree to adopt these playing styles on the modern instrument today, the marriage between the experience on a historical piano and the knowledge of the nineteenth-century piano techniques would help explain why these techniques were used, taught, and passed down in treatises. Therefore, it does not signify that one must apply these researched techniques in order for the music performed to be authentic, but rather to explore the possibilities that lie within them, and to be informed by new discoveries of knowledge.

[6] Richard Taruskin, 'The Authenticity Movement Can Become a Positivistic Purgatory, Literalistic and Dehumanizing', *Early Music*, 12.1 (1984), pp. 3–12 (p. 11), doi:10.1093/earlyj/12.1.3.

5.2 The Journey of Discovery Through First-Hand Experience on Historical Instruments

According to Breitman:

> Playing an instrument is a two-way street. We ask things of our instruments, and they respond — but not always in the way we expect. Their effect on us is immediate, and they begin teaching us the moment we touch them.[7]

That said, it would be difficult for a twenty-first-century modern pianist to imagine the touch needed on a historical piano, how the piano would respond to a specific touch, and what kind of tone would follow, despite information from current literature. First-hand experience on the instrument would be most valuable, as we would be able to learn how nineteenth-century techniques complement the instrument when searching for the right response from the piano. This can be achieved through artistic practice by materializing the subject studied, situating these techniques in the appropriate setting such as the instruments used when they were first established, along with the relevant information such as descriptions of the instruments in the current literature and the techniques from technical treatises and books from the nineteenth century.

[7] David Breitman, *Piano-Playing Revisited: What Modern Players Can Learn from Period Instruments* (University of Rochester Press, 2021), p. 9.

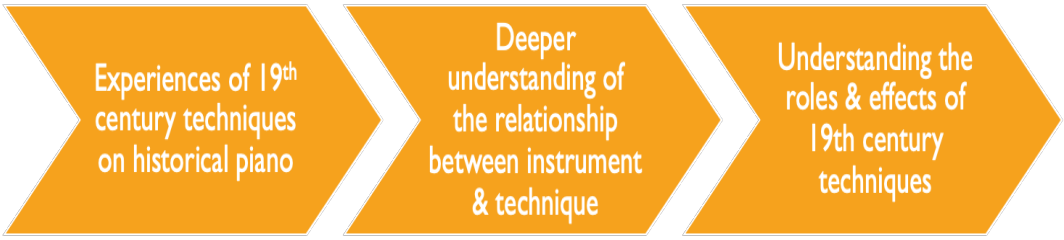


Figure 5.1. The process of artistic practice.

While each individual can take their own personal path to discover and adapt to the instrument, my artistic experience will focus on the adaptation of nineteenth-century techniques to observe how they find their place in the process. The exposure to historical instruments provided first-hand experiences of the effectiveness of the techniques along with the kinaesthetic sensations and the response of the instrument, which then brought a deeper understanding of the relationship between the instrument and the researched techniques. It also helps us understand their roles and effects which can be more difficult to realise on a modern piano, and demonstrate the impact of these techniques on our body movements and performance. The current literature and accounts of other pianists would also be used in this section along with my artistic experience to contextualise the process of transitioning from a modern piano to a historical piano.

5.3 Artistic Practice: The Initial Learning Experiences of Historical Techniques on Historical Instruments as a Modern Pianist

As we know, the keyboard instruments in the nineteenth century developed from those in the late-eighteenth century, making their advancement through the mid-nineteenth century towards the modern piano. While selections of keyboard instruments throughout the nineteenth century were quite vast, the historical instruments used in this embodiment experience were a Rosenberger fortepiano from 1795, a Dereck Adlam fortepiano (n.d.), a Conrad Graf fortepiano from ca. 1826, an Erard piano from 1842, and a Pleyel piano from 1866.

My first experience with a historical piano was an exploratory visit at The Richard Burnett Collection in January 2022 where I had the opportunity to play on the Rosenberger fortepiano as well as a Graf fortepiano. The second visit in February 2023 was a prepared visit using a combination of my own techniques and researched techniques, mainly Ludwig Deppe's approach on the Erard and Pleyel. Another visit at the Cambridge University Instrument Collection in March 2023 was a continuation of the initial exploratory visit that focused on J.N. Hummel's and Carl Czerny's instructions on the Dereck Adlam fortepiano. During these visits, J.N. Hummel's techniques were paired with the Rosenberger and Dereck Adlam fortepiano, Carl Czerny's techniques with the Graf piano, and late-nineteenth-century techniques such as Ludwig Deppe and Theodore Leschetizky's techniques on the Erard and Pleyel piano. This artistic process would centralize around my embodiment experience as a modern pianist, applying the nineteenth-century techniques on these historical instruments on three separate occasions. The experience, including

feedback and observations done through autoethnography from these visits will represent my voice as a performer.

The main roles of the nineteenth-century techniques that surfaced from this artistic practice complemented the touch, control, and tone of the historical instruments. They emerged through the characteristics of the historical pianos — light and responsive touch, as well as shorter tone decay, which then affect other parameters such as dynamics and phrasing in a performance. These researched techniques also help narrow the gap of transitioning from modern to historical instruments.

5.3.1 Light and Responsive Touch

As touch is closely linked to the mechanism and action of the instrument, a brief overview of the mechanisms found in historical pianos would help us better understand how these instruments are different from the modern piano. The fortepiano gained its popularity in Vienna in the last twenty years of the eighteenth century. In terms of instrument building, piano makers in Vienna built two competing types of mechanisms, one by pushing and another by pulling.[8] A mechanism with pushing action is called *Stossmechanik*, while a mechanism where the hammer is 'pulled' into an upward movement is called *Prellmechanik*.[9] It was mentioned by Robert Giglio that builders were in favour of the *Prellmechanik* action

[8] Robert V. Giglio, 'Music, language, and fortepianos: Testing the speaking capabilities of stoss and prell' (unpublished master's thesis, McGill University, 2015) p. 28 <https://may.idm.oclc.org/login?url=https://www.proquest.com/dissertations-theses/music-language-fortepianos-testing-speaking/docview/2512365158/se-2?accountid=12309> [accessed 15 Jan 2025].
[9] Tom Beghin, 'Playing Mozart's Piano: An Exercise in Reverse-Engineering', *Keyboard Perspectives*, 1(2008), pp. 1–35 (p.2), <https://ecommons.cornell.edu/items/e7bf4242-806e-43a7-9329-94207831a671>[accessed 15 Jan 2025].

in grand fortepianos by the end of eighteenth century.[10] A historical instrument that involved these two actions would be Mozart's Walter fortepiano. Michael Latchlam discovered that some parts of the fortepiano for example the hammer rail of the *Stossmechanik* was replaced with that of a *Prellmechanik*.[11] In a project where Tom Beghin and Chris Maene replicated Mozart's Anton Walter grand fortepiano, Maene built the mechanism based on the fortepiano before and after Mozart's piano underwent its changes. After playing both of these actions, Beghin described *Stossmechanik* (see Figure 5.2) as:

> an extremely smooth action, much lighter, in fact, than the *Prellmechanik*, but one that constantly requires a certain minimum of finger pressure for the hammer to hit the string at all. It produces either hard, harpsichord-like tones or disarmingly warm and tender sounds, with surprisingly little, or nothing, in between.[12]

While for *Prellmechanik* (see Figure 5.2), he described:

> Less declamation but more *bel canto* is the message I receive from the *Prellmechanik* and its hammer heads, which have three layers of leather instead of the previous single-layer coverings. The dynamic focus shifts from loud and soft to the many shades in between. This significant gain in expressivity, however, comes with a loss in percussive bite and in overall intimacy. The new action turns the instrument into one that is more

[10] Giglio, 'Music, language, and fortepianos', p. 30.
[11] Michael Latchlam, 'Mozart and the Pianos of Gabriel Anton Walter', *Early Music*, 25.3(1997), pp. 382–400 (p. 386), https://www.jstor.org/stable/3128423 [accessed 28 Apr 2024].
[12] Beghin, 'Playing Mozart's Piano', p. 21.

expansive, indeed more expressive — one that effectively combines the full qualities of a clavichord with the strength of a grand piano.[13]

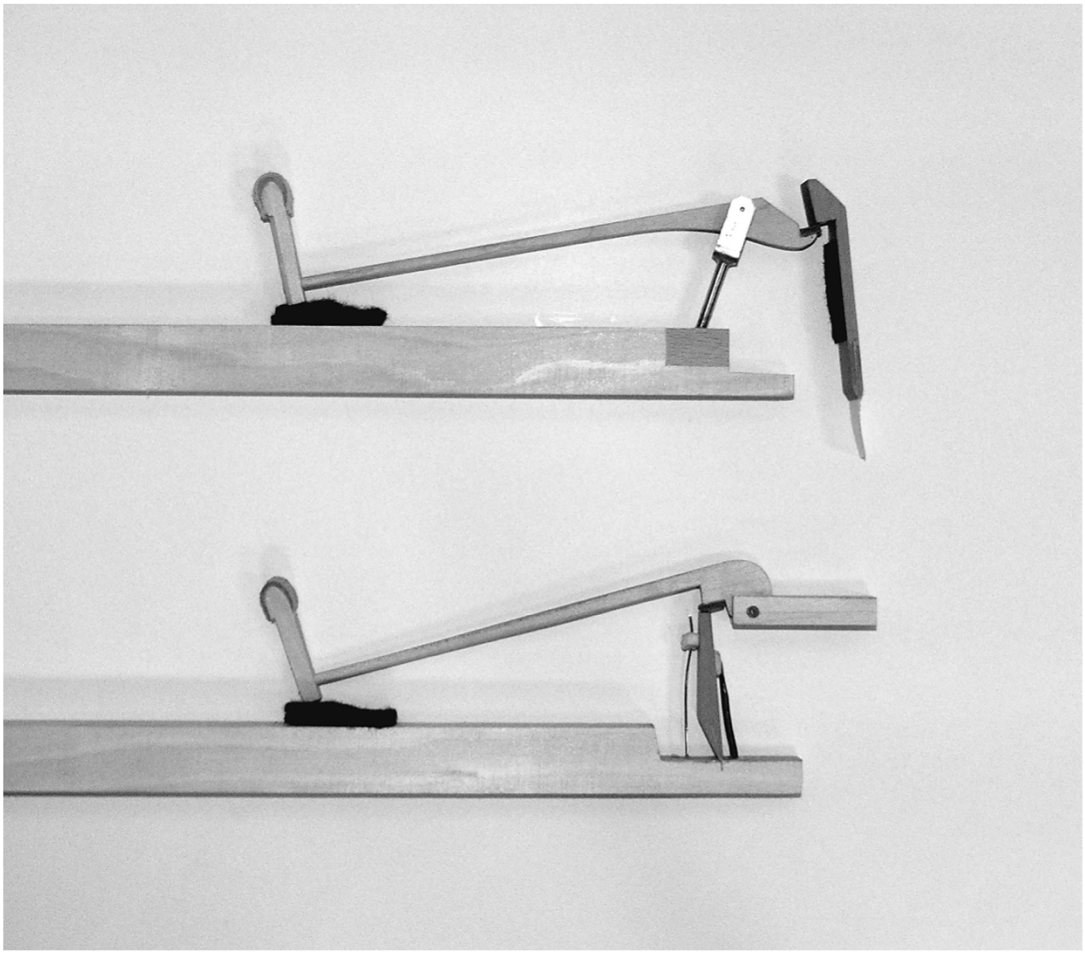


Figure 5.2. *Prellmechanik* (top) and *Stossmechanik* (bottom).
Taken from 'Playing Mozart's Piano' by Beghin, p. 6.

As we progress towards newer instruments, we find that the mechanism of the Erard is more similar to the modern piano, while Pleyel has a simpler mechanism.[14] The drawings of piano actions by Christian Nobbs (see Figure 5.3 and

[13] Beghin, 'Playing Mozart's Piano', p. 21.
[14] Jun Ishimura, 'Creating a New Interpretation of Chopin's Piano Music Using a Comparison of Modern and Historical Instruments through the Performance of the Second Piano Sonata' (unpublished doctoral thesis, Trinity Laban Conservatoire of Music and Dance, 2020), pp. 43–44 <https://openaccess.city.ac.uk/id/eprint/25198/> [accessed 20 March 2023].

Figure 5.4)[15] provide us with a rough idea of the differences in complexities of the piano actions of Pleyel and Erard.

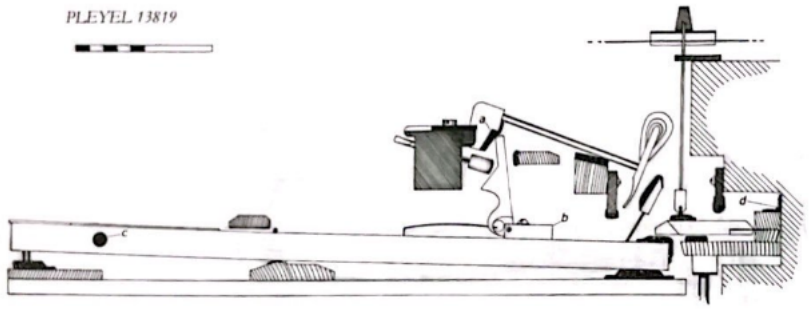


Figure 5.3. Mechanism of Pleyel No. 13819.
Scale drawing of Pleyel piano action by Christopher Nobbs, taken from 'Chopin's Piano Action: A Comparison of the actions of Broadwood, Pleyel and Erard' (2010), p. 42.

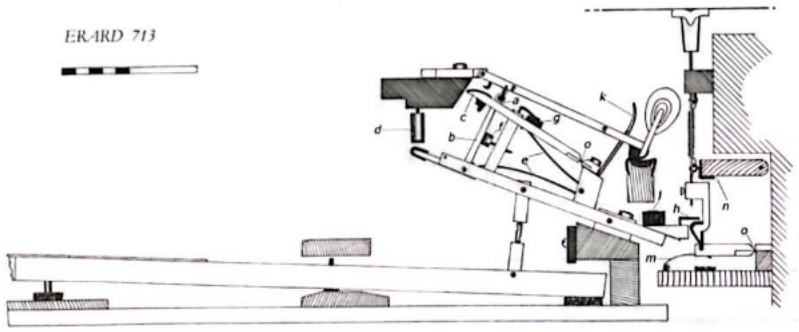


Figure 5.4. Mechanism of Erard No. 713.
Scale drawing of Erard piano action by Christopher Nobbs, taken from 'Chopin's Piano Action: A Comparison of the actions of Broadwood, Pleyel and Erard' (2010), p. 42.

Furthermore, the hammer of a Pleyel piano is also smaller and thinner compared to that of Erard's, which looks thicker and rounder. Ishimura pointed out that the hammer of the Erard already exhibits resemblances to the hammer of a modern piano.[16] In terms of playing, Ishimura compared both an Erard and a Pleyel

[15] Christopher Nobbs, 'Chopin's Piano Action' in *Chopin's Swansong: the Paris and London pianos of his last performances*, ed. by Alec Cobbe (The Chopin Society and The Cobbe Collection Trust, 2010), pp. 38–44 (p. 42).
[16] Ishimura, 'Creating a New Interpretation of Chopin's Piano Music Using a Comparison of Modern and Historical Instruments through the Performance of the Second Piano Sonata', p. 48.

and concluded that the mechanism of the Erard has a fast attack regardless of the dynamics produced on the piano.[17] However, the hammers in the Pleyel piano reacted to the speed of touch on the keyboard. Ishimura explained 'it moves slowly if the keyboard is pressed slowly, and swiftly if the keyboard is struck quickly'.[18] She further explained:

> Although the Erard mechanism does not react to slow touches as much as the Pleyel mechanism and does not allow the same variety of soft touches, this swift motion of the hammer on the Erard has the effect of producing a more sonorous sound than the Pleyel.[19]

As a result of these mechanisms and actions in historical pianos, the most distinct characteristic of the fortepiano when transitioning from a modern piano is the touch, as the keys of a fortepiano were usually smaller, shallower, and lighter, which resulted in the techniques that were lighter, quieter, and smaller in movements. To further clarify how different these instruments were, Gunn compared the fortepiano to an eight-foot Steinway D concert grand, and said that the concert grand weighed six times more than a Walter fortepiano.[20] The action of a fortepiano is also light, simple and uses only a single-lever, as compared to the hammers of a modern piano.[21] Not only that, the strings, due to the wooden frame of a fortepiano, can only withstand less than a quarter of the strain of the modern piano, and the keys are also

[17] Ishimura, 'Creating a New Interpretation of Chopin's Piano Music Using a Comparison of Modern and Historical Instruments through the Performance of the Second Piano Sonata', p. 46.
[18] Ibid., p. 47.
[19] Ibid., p. 48.
[20] Gunn, *Discoveries from the Fortepiano,* p. 17.
[21] Ibid., p. 17.

less than half the weight of their modern counterpart.[22] Cited in Kobb,[23] Michael Cole, an instrument maker who measured and compared important parts of the piano action between Viennese and modern grand pianos, provided a more detailed comparison. He mentioned that the key head length between a Viennese Stein and a twentieth-century piano had a difference of about 14 to 17mm. The key dip difference between a Viennese piano and a Steinway model D is about 4 to 7mm, and the energy input required to play C^3 quietly on a Stein fortepiano is 1/10th that of a Steinway grand piano.[24] Gunn also mentioned that the energy required to play a key on a fortepiano is only about a third of that used for the modern piano.[25] Whereas for the Erard and Pleyel piano, Ishimura stated that the weight needed in playing the A^2 note on a Steinway model D is about 60 grams, as opposed to about 50 grams on the Erard and 30 grams on the Pleyel.[26] While these informative and quantitative measures provide a good idea of the differences between modern and historical instruments, there isn't a direct link to transfer these numbers to the realm of tactile and kinaesthetic sensation. This is where techniques may act as a tool to aid this transition.

Wesley Weyman described the early pianos as 'light action, small key dip, slight singing quality, [with] little contrast and limited power', and mentioned that the 'quiet hand' was logical and necessary as it would be difficult to control the force

[22] Ibid., p. 18.
[23] Michael Cole, *The Pianoforte in the Classical Era* (Oxford: Oxford University Press, 1998), pp. 306–7, cited in Christina Kobb, 'Viennese Piano Technique of the 1820s and Implications for Today's Pianists', *Music and Practice*, 4(2019), doi:10.32063/0403.
[24] Ibid.
[25] Gunn, *Discoveries from the Fortepiano,* p. 18.
[26] Ishimura, 'Creating a New Interpretation of Chopin's Piano Music Using a Comparison of Modern and Historical Instruments through the Performance of the Second Piano Sonata', p. 45.

needed to fit the delicate action unless the hands were held in a quiet position.[27] As such, we can observe that because of the difference in touch and weight of the instruments, modern pianists train and learn to use different parts of the hand, arm and body to fully utilize the potential of a modern concert grand, which is a stark contrast to a fortepiano of the nineteenth century where terms such as light, shallow, small, and simple were commonly used to describe its touch. If one would play on a historical keyboard instrument using the modern approaches, the tone produced would be very much affected, as these instruments were much more delicate than our instruments today.

I distinctly recall my first attempt on the Rosenberger that startled me to a point where I could not even finish a short piece as I would accidentally play some notes with a little too much force and stop occasionally when the tone produced felt 'stuck' and 'forced'. This lack of control resonated with Gunn's words where she said,

> At first attempt, many modern pianists play too hard, over-attack, and use arm weight, which results in a pressed, forced, and ugly sound. Delicacy, sensitivity to touch, controlled finger action, and finesse are the keywords in capturing fortepiano style on the modern piano.[28]

The famous Malcolm Bilson also once expressed how he felt when he first played on a fortepiano in an interview, and said:

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[27] Wesley Weyman, 'The Science of Pianoforte Technique', *The Musical Quarterly*, 4.2 (1918), pp. 168–73 (p. 170), doi:10.1093/mq/IV.2.168.
[28] Gunn, *Discoveries from the Fortepiano,* p. 31.

> I must be the least gifted person for the job; my hands are too big, and I don't have the necessary technique such an instrument required. In trying to operate this light, precise mechanism, I really felt like an elephant in a china closet.[29]

I believe the same issue was faced by many modern pianists who tried to play on a fortepiano or other historical instruments when approaches and techniques were not carefully considered.

As modern pianists were trained to avoid 'bumps' in playing *legato* lines,[30] I was naturally attentive to sudden or random accents, which I caught myself doing very often when I was playing on the Rosenberger fortepiano. My hands and fingers that were used to exerting larger force using the momentum from the rotation of the hand and larger joints, and the lack of control of smaller motor parts like the fingers caused these random accents to occur. This concern from my first attempt on the fortepiano was also recognized by Gunn as she pointed out that if one attempts to 'bite or attack' a passage on a fortepiano with the same way it is done on a modern piano, it would produce a 'choked and choppy tone' due to the different way the modern piano tone develops.[31] The random accents and bumps that can be heard all over the place and were not produced to my intention, were clearly out of my control

[29] Andrew Willis, 'Jouez Le Fortepiano!: An Interview with Malcolm Bilson', *Early Music America*, 2006, pp. 28–32, <https://libres.uncg.edu/ir/uncg/f/a_willis_jouez_2006.pdf> [accessed 14 April 2023].
[30] Jun Ishimura, 'Creating a New Interpretation of Chopin's Piano Music Using a Comparison of Modern and Historical Instruments through the Performance of the Second Piano Sonata' (unpublished doctoral thesis, Trinity Laban Conservatoire of Music and Dance, 2020) <https://openaccess.city.ac.uk/id/eprint/25198/> [accessed 20 March 2023].
[31] Gunn, *Discoveries from the Fortepiano,* p. 32.

when unconsciously resorting to the modern piano techniques that were already instilled in me and ingrained in my fingers.

I tried to incorporate ideas and concepts by Hummel, for example, his instructions for 'the elbows [to be] rather turned, towards the body, yet without pressing against it', 'the hands… turned rather outwards, like the feet ', and 'avoid every violent movements of the elbows and hands'.[32] I also experimented with concepts that were brought forward through Hummel's words such as, 'the quickness of motion lies only in the joints of the fingers… and not lifted too high from the keys'.[33] I kept my elbows close and tried to limit big movements of the arms including the extension of elbows outwards. The hand position naturally follows to turn outwards when elbows are kept close to the body, and the melodies, when going towards the outer octaves of the piano, would make use of the outwardly turned hand position with the music being led by the fingers. Hummel's position pushed me to restrict the use of elbows, arms, and even the fingers.

Modifying my approach by limiting the use of hand and arms, excluding large movements, and confining the work to mostly the fingers alleviated the unevenness in the playing. The stiff and forced tones did not attract as much attention anymore, and the tones became a little more even. However, playing too carefully resembled walking on eggshells, as the fortepiano requires a much lesser force and one needs to be aware not to go too soft as well, which Gunn described as 'lacking

[32] Johann Nepomuk Hummel, *A Complete Theoretical and Practical Course of Instructions on the Art of Playing the Piano Forte* (T. Boosey, 1828), I, p. 3 <https://urresearch.rochester.edu/institutionalPublicationPublicView.action?institutionalItemId=28625>[accessed 2 March 2021].
[33] Hummel, *A Complete Theoretical and Practical Course of Instructions on the Art of Playing the Piano Forte,* I, p. 4.

depth'.[34] On the other hand, over playing, exerting too much force, and using bigger muscle groups such as the forearm or the whole arm out of habit would jeopardize one's playing, resulting in harsh and uncharacteristic tone.[35] Therefore, one needs to find a good balance to fit the range offered by the instrument.

While a very different playing approach was needed for the extremely light touch and sensitive keys of the Rosenberger fortepiano, a stronger Graf fortepiano, being produced in 1826, presented a slightly more familiar touch compared to the Rosenberger, although the keys were still considered light, and exerting too much force onto the keys would harm the piano. While some of my own movements that were already deep-rooted in my playing can still be vaguely seen when playing the Graf piano, I employed the use of perpendicular finger movements that were endorsed by Czerny and focused more on using the fingers rather than the arms, keeping the arms straight as Czerny instructed.[36] Through Video 5.1 taken at The Richard Burnett Collection, it could be clearly seen that my arms were kept fairly straight from the elbow to the wrist and finger knuckles (see Figure 5.5), and perpendicular finger actions coming from the base of the fingers (see Figure 5.6) can also be consistently seen while playing. Transitioning from a modern piano, this technique can be more easily done on a historical piano. Czerny's technique of focusing on the fingers, keeping the arms straight, and avoiding unnecessary gestures were sufficient in producing an adequate effect on the sound, therefore, movements such as wrist rotations and the momentum of arms were not needed.

[34] Gunn, *Discoveries from the Fortepiano,* p. 89.
[35] Ibid.*,* p. 90.
[36] Carl Czerny, *Complete Theoretical and Practical Pianoforte School, Op500,* trans. by J. A Hamilton (R. Cocks, 1839), I, pp. 2–54.

Although modern pianists who were used to much freedom in the movement of arms may consider these movements relatively more restricting, it does not cut back on the ability to play on the historical piano. On the other hand, it placed my body in an upright position where calmness can be greatly cultivated. It also fosters a sense of control in playing, especially in the mechanisms of the hand. These techniques made sure that the appropriate movements were maintained in general, in playing both simple and complex or even challenging passages.

Beethoven - Piano Sonata No.21 in C major, Op. 53 (Waldstein), 1st Mvt, Graf fortepiano

Video 5.1. Beethoven's Piano Sonata No.21 in C major, Op. 53 (Waldstein), 1st Mvt, on Graf fortepiano at The Richard Burnett Collection.





Figure 5.5. Left: Straight arm from elbow to finger knuckle.

Figure 5.6. Right: Perpendicular finger action.

When I first learned these historical techniques, I recalled myself wondering if these techniques would even be a viable alternative approach, without beginning to consider challenging passages. I noticed that using my own techniques to play Hummel's Fantasina was already not an easy task on the modern piano, would simplifying or reducing the use of body and hand parts be a viable method? The fortepiano used in my exploratory visit was a fortepiano with Viennese action and knee levers built by Michael Rosenberger who was believed to have trained under Anton Walter, the piano maker for one of Mozart's piano.[37] This experience highlighted a connection between the techniques and the instrument, especially that of Hummel's techniques and the Rosenberger fortepiano, which I was not able to realize on the modern piano despite it being a successor of the fortepiano. While the researched nineteenth-century techniques without any relevant context may sound awkward, unnatural, and restrictive to modern pianists, in applying suitable techniques on the appropriate instruments, we would realise that they were used to complement the instruments, just as how large arm movements are used to maximise the full range of dynamics of a modern piano. It also demonstrated the possible intention and purpose of why the early nineteenth-century techniques were much smaller with an emphasis on the fingers while the use of wrists, elbows, arms, and shoulder were considered extraneous and faced rejection.

5.3.2 Micro Control of the Keys

Another aspect of the nineteenth-century techniques that arose through my trials and attempts, was the ability to employ micro-level control on the keyboard. Due to the

[37] 'Grand piano by Michael Rosenberger, Vienna, c1795', Finchcocks Charity & Richard Burnett Collection, n.d. < https://www.finchcocks.co.uk/Richard-Burnett-Collection/file/rosenberger.php> [accessed 15 Jan 2025].

extreme differences in touch, it was no surprise that the control on a fortepiano would be very different as well. As Breitman said, one would 'require focus on the micro level'.[38] This can be especially true on older keyboard instruments such as the fortepiano. The magnitude of force put into playing by modern pianists is much larger than that required on a historical piano.

The realisation of the need for smaller movements and finer control was recorded in my reflection log from the 28th of November 2022. I wrote:

> In following Leschetizky's instruction of upward wrist movement in playing *cantilena* melody, I always thought it made sense when I was practicing as I think the swift upward movement would provide support to the wrist and finger when playing, enabling a more firm and powerful touch. However, I did not realise that I was approaching this technique from a more modern perspective. When I compare this swift upward movement of the wrist to the wrist exercise provided at the beginning (section 3) of Brée's book, inconsistencies between the wrist movement that I attempted to realise and Brée's instructions can be seen, as she noted that 'on raising the wrist it does not rise higher than its original position'.[39] However, I always ended up raising my wrist higher than the original position in my practice, resulting in an almost straight arm and wrist, or having the wrist high in an arch. Therefore, the question, 'can I raise my wrist higher than the original position

[38] Breitman, *Piano-Playing Revisited*, p. 8.
[39] Malwine Brée, *The Groundwork of the Leschetizky Method*, trans. by TH. Baker (New York: G. Schirmer, Inc, 1902), p. 4.

> when using the swift upward movement of the wrist in playing *cantilena* melody?' arises.

While this moment of realisation happened during my practice on a modern piano, my experience of the historical techniques on historical piano further confirmed the concept of micro control. When transitioning to a historical piano, the level of control and the sensitivity of touch will need to be expanded, and one would need to adapt to the instrument by changing the usual efforts into micro level efforts. Following my visit to the Dereck Adlam fortepiano on 27th of March 2023, I wrote:

> I felt I was using larger joints because my smaller movements were not as sufficiently trained to execute them on a fortepiano, thus my instinctive reaction of using my original approach. But once I started playing on the keys, I learned the limit of the instrument and knew that the sound produced was already at its limit and would not develop to how it would sound on a modern piano.

Therefore, rather than exploring the louder range of the keyboard, it was more necessary to explore the softer range of dynamics. Also, after my attempt on the Erard piano (17th of February 2023), I wrote:

> […] the sound produced was quite sensitive to the touch. While it can go loud, it couldn't withstand playing using the arm weight as the sound produced will be stiff, and not ringing. Assuming that our energy used in playing the usual modern piano was between level 5 to 10, we will need to

> explore level 2 to 7 on this piano. I was not used to controlling the softer range of the piano as I barely had any control over my hand or fingers; it was either too loud or a missed note. [...] The levels between my tones that were 'too loud' for soft dynamics and the missed notes were the gap in [the control of] dynamics that I do not possess, possibly because of the techniques and instruments that I have been using. The sensitivity needed especially in exploring soft dynamics did not parallel what we use on a modern piano. My own techniques that I use on modern grand piano could be considered excessive. There is a limit to how much force you can apply on the keys, and there is a specific force that is optimum for the tone produced to ring and resonate. Applying more than the needed force would only make it worse, leading to stiff notes.

This again, showed that I needed more levels of control in the soft dynamics when playing on the Erard, which was difficult to achieve using modern techniques. Concepts of the nineteenth-century techniques that focused on smaller parts of the hand and restricted parts of the arm, such as the elbows, were to help refrain the hand from thumps and blows, and to prompt more delicate touches using micro level efforts. They also indicate the rough range of effort-dynamics[40] that are useable within the boundary of the instrument.

The above section (5.3.2) discussed two different historical instruments — a fortepiano and an Erard piano — that originated from different times of the nineteenth-century. Although they possess similar characteristics where both needed

[40] I use this term when referring to the relationship between effort and dynamics in playing.

a more delicate control, they would differ in range and magnitude. While a fortepiano that is extremely light and sensitive as mentioned above would produce a sound when the pianist accidentally touches an unneeded key, an Erard piano while also lighter compared to a modern piano, is not as sensitive, and is nearer to the modern piano when placed on a spectrum. Therefore, using the modern approach did not seem to be as unfitting, and could almost pass on a mid-nineteenth century piano. However, differences can still be felt and heard when historical techniques were applied, revealing how they could be more appropriate on a historical instrument.

Although one of the main differences of historical techniques is to be mindful of large body and hand movements, if we only limit our body movements while adhering to our original techniques, these techniques would not be viable as they cannot be utterly simplified into mere movements. However, embracing and adapting our body to these smaller movements will help us realise which smaller part of the body or hands should then be used, leading to the nuances that were created through using these approaches. Through this, we can observe how these techniques help lead us in another direction of performing.

Ludwig Deppe's feather-light hand technique that focused on using the arm and shoulder in carrying the hand and fingers naturally demonstrated a lighter touch,[41] and these touches helped discover the layers of key depth. When fingers were placed on the key without much tension and with the upper arm carrying the hand, the weight of the shoulder and arm does not get transferred into the hand,

[41] Elisabeth Caland, *Artistic Piano Playing as Taught by Ludwig Deppe Together with Practical Advice on Questions of Technique*, trans. by Evelyn Sutherland Stevenson (G. Schirmer, 1903), pp. 20–22 <https://catalog.hathitrust.org/Record/100340903> [accessed 4 April 2023].

therefore, when I carefully press in my first note, the fingers can feel the resistance of the keys. While not knowing how much force one would need with a weaker control of smaller finger parts, I would slowly, little by little lean into the keys, pressing in just a little on the surface, and eventually progressing to the full depth of the key, exploring the interaction between fingers and keys using the feather-light hand technique. After some practice, one would roughly grasp what is needed to produce the desired soft tones.

In connecting the notes, especially in playing melody lines where one note flows to the next, the interaction between fingers and keys became rather dependent on each other. As a modern pianist, I need to resist the urge to put more weight into the keys to make it louder. Instead, I needed to ensure the connectivity of one note to the next by making sure that these touches were not too harsh or stiff that the resonance of the tones were cut off before the next notes were sounded. This can be achieved through the resonating tones created by a relaxed wrist, and light hands and arms.

The feather-light touches were not only successful on a modern piano, but also on a historical instrument, in an even clearer manner. This can be seen through Video 5.2 where I performed on the Erard piano using a combination of my own techniques and the researched techniques in different sections of Chopin's *Andante Spianato et Grande Polonaise*. The beginning phrase of *Andante Spianato* was played with the right hand mainly with the feather-light hand technique. The right hand was carried by the shoulder and arm, and therefore floats above the keys. It can be seen that the hand hangs down from the wrist, creating lighter touches on the right

hand. The palm acts as the control centre for the fingers, so the fingers can control the touch or lightness desired. When observing the beginning of *Andante Spianato*, the posture of hand and the placement of my fingers on the piano was how I made sure the fingers sank into the key without striking, as Deppe requested. While they felt weaker, they drew out the sound of a historical piano well (refer to Video 5.2 at 0:00–0:55).

These minute nuances of the hand would reveal the colours of the historical piano, making me feel bare or exposed, as these tones were different from the sonorous or louder tones I achieved from a modern piano. They felt rather light and empty, but the responsive touches created flowing tones on a historical piano. However, these nuances can also be easily overworked due to my own modern approach. While a few shades of tones could be heard through the beginning part of *Andante Spianato*, I believe a greater variety of tone colours could be developed with more practice and experience with a more stable use of these touches.



Figure 5.7. Bars 17 to 25 of Chopin's *Grande Polonaise Brillante* Op. 22. (Copyright 1998 by G. Henle Verlag, München).

On the other hand, I started the main theme of the Polonaise with my own techniques (refer to Video 5.2 at 05:19–06:24), and only used Deppe's feather-light hand approach when the theme returns (refer to Video 5.2 at 11:12–12:15). The same theme played using the two approaches resulted in two different outcomes. When using my own techniques, circular motion and the extending of elbows were used especially in the right hand when the melody was being played. I tried to make the right-hand melody louder and brighter than the left-hand part. However, the result was that each attack of the note can be heard, and the ringing quality of the opening 'G' note was 'killed' (see Figure 5.7. and refer to

Video 5.2 at 05:19) and the same scenario occurred for multiple occasions. For example, the G note in bar 19 was also ineffective. My modern technique of extending the elbow must be too overwhelming where the overexerted tone did not sustain and connect to the following note. The Ab notes (circled in blue) in bar 21 that were accentuated, on the other hand, were at the verge of cracking. As a whole, the opening phrase performed with my own techniques had rather uneven tones with some over accentuated, some more muffled or silenced, while others at the brink of 'cracking'. While the tone colour of the right-hand melody was generally brighter, unevenness in the melody can be observed. This demonstrated that although using my own technique where one presses deep into the key with the elbow extending outwards (see Figure 5.9) may produce a longer reverberating singing tone on a modern piano, doing this on the Erard did not produce the same result.

However, in using Deppe's approach where arm weight should be carried, sustained, and not pushed into the keys, the arm carries the forearm, and the wrist could be seen to be raised (see Figure 5.8.). As the touch of the Erard is lighter, it sounded slightly softer when using Deppe's approach, leaving it softer than the left-hand accompaniment, however, the tones reverberated and produced a more ringing tone, retaining a better clarity (refer to Video 5.2 at 11:12). While one can employ the usual efforts used on a modern piano on a historical piano, it pushes the limits of its dynamics and would articulate the attack on the keys, which is less helpful for a ringing quality. As a whole, using historical technique on the same phrase presents a more flowing state, as opposed to the rather robust and vigorous playing style from using my own technique. Therefore, the researched techniques, through this artistic practice, supports the concept of 'less is more'.



Figure 5.8. Arm position and placement when using Deppe's techniques.



Figure 5.9. Arm position and placement when using own techniques.

Chopin - Andante Spianato et Grande Polonaise, Erard fortepiano

Video 5.2. Chopin's *Andante Spianato et Grande Polonaise Brillante*, using Erard fortepiano at The Richard Burnett Collection.

5.3.3 Overcoming Shorter Tone Decay

One of the most obvious differences in characteristics between a fortepiano and a modern piano would be the tone. A tone produced on a fortepiano is less powerful than a modern piano and it directly affects the capability of sustaining a tone. Gunn pointed out the difference between a modern piano and a fortepiano saying that the tone for modern piano develops through four stages– attack, sustain, bloom and decay, while the tones from a fortepiano decay from the moment the hammer strikes the key.[42] When measured scientifically, Breitman mentioned that a middle C played *mf* on his Steinway would sustain about four seconds, but the same note would *diminuendo* almost immediately on his Walter copy fortepiano.[43] As a modern piano tone would sustain and bloom before decaying, this affects the pianists' perception and expectation of the tones produced by a fortepiano. Breitman described the difference between modern piano and historical piano saying that the older instruments excel at 'speaking' while the modern ones gradually transitioned toward 'painting' as they were capable of long melodic lines and grand dynamic contrasts.[44] This, in connection, shows the evolution of keyboard instruments from having a lesser ability to sustain and connect notes, to the modern piano that is capable of sustaining tones despite being a percussive instrument. This difference naturally resulted in a change in tempo. For example, Pianist El Bacha, as cited in Chai, when playing on the 1836 replica of the first Steinway Grandpiano, reacted by saying 'I find myself wanting to sing in every register […] and often to play faster, pushed along by the response of the piano […]'.[45]

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[42] Gunn, *Discoveries from the Fortepiano,* p. 19.
[43] Breitman, *Piano-Playing Revisited,* p. 34.
[44] Breitman, *Piano-Playing Revisited,* p. 8.
[45] Shuann Chai, 'Documenting Replication, Replicating Sound?', *Music & Practice*, 1(2013), doi:10.32063/0110.

Because of reasons mentioned above, when applying Leschetizky's techniques that emphasized a lowly positioned wrist, I had trouble figuring out the difference when playing with a low wrist and without, or how this position makes a difference in *cantilena* melody as described by Brée. I began lowering my wrist intentionally when applying Leschetizky's techniques on the modern piano, and when unsuccessful, I tried adjusting to different height of chairs to match the hand position in hopes of understanding the core principle of this hand technique. However, the resulting kinaesthetic sensation and after-thoughts collected from the experience was noted as below (from the 16th and 28th of November 2022 respectively):

> playing with the sinking wrist feels like the flow of energy was interrupted at the sunken wrist, not being able to transfer the energy through to the hand and hence relying on the use of fingers when playing (16th Nov 2022). I couldn't help but wonder, is this how one should place their hand on the piano, but not how it should be when playing? Am I sitting too low? Should I adjust the chair height to make it higher? When the seat is higher, would it be more natural for the wrist to be lower than the knuckles? (28th Nov 2022).

Nonetheless, I continued to practice with this hand position, hoping to gain some insight through practicing. However, this can all be easily explained when the technique and low wrist position were performed on a historical piano such as the Erard. I applied different elements of the technique to different sections of Chopin's *Andante Spianato*, and Leschetizky's low wrist technique was used in bars 21 to 34

of Chopin's *Andante Spianato* (00:56–01:26 ), as well as around bars 115 to 120 of the *Polonaise* (09:16–09:27 ) in Video 5.2 after which it slowly fades into my own techniques. Not only that, the 'impeded flow of energy' was no longer felt or mentioned in my reflection log, it also made it easier for me to execute the *legato* lines and gave a more *legato* effect which can especially be seen in the former example. The low position of the wrist made the link between notes more connected with minimal movement of the fingers. In contrast to Deppe's feather-light hand that produces lighter and flowy tones, it suited the *cantabile* melody more as the low wrist, supporting the fingers, gives a deeper touch and perception. This analysis could only be seen through applying the techniques on a historical instrument as the tone decay was shorter and therefore the logic behind this technique presented itself.

These low wrist positions and swift upward wrist movements also motivated a more supple wrist. The wrist would need to be in a relaxed state to be able to perform these movements which helps in avoiding overpowered touches that would then lead to harsh and disconnected tones. Where the wrist was tensed, a heavier touch or thump would be applied on the keyboard, resulting in forced tones. These tones produced using the wrist were loud enough to be used on a melody line, but not too harsh that they sounded forced, or stopped.

5.3.4 Dynamics

The micro effort and micro control from quiet movements and approaches directly informs us of the different dynamic range of the historical instrument. One example of the inclination towards softer dynamics can be seen through Chopin's words in his letter below that showed the frustration and dislike of harsh playing.

> If I'm in the middle of a letter I can't bear it when the bell rings and in strides a huge, fully-grown, powerful, bewhiskered creature who sits down at the piano, improvises God knows what, storms, bangs like a madman, writhes about, crosses his hands and hammers on one note for fully five minutes with one enormous finger which Heaven intended for holding the whip and reins of some farm-steward away in the Ukraine - such is the portrait of Sowinski [1805–80] who has no other merits than a good appearance and a kind heart. Never could I have a better opportunity of conceiving what is meant by charlatanism or stupidity in art than just now, when I so often have to listen to him as I move about my room while getting washed. I blush to the ears.[46]

Due to the instruments that Chopin was using, his level of dynamics differed from our understanding and were relatively quieter. Badura-Skoda's table, mentioned in Eigeldinger, suggested that Chopin's *ff* would correspond to our *mf*, *mf* with *mp*, and *p* with *pp–ppp*, while *pp* would almost be inaudible to us. Jean Jacques-Eigeldinger was in support of Badura Skoda's interpretation and said that one has to take into account Chopin's dynamics when adapting them onto present pianos for an authentic interpretation of the composer's aesthetic of sonority.[47] If this were the

[46] Eigeldinger, *Chopin: Pianist and Teacher*, p. 127.
[47] Eigeldinger, *Chopin: Pianist and Teacher*, p. 126.

case, it would only make sense for the modern pianist to keep this in consideration when transitioning from a modern piano to a historical piano.

Edmund Frederick mentioned the 'big' sound was neither what the composers of Chopin's generation expected nor what they wanted, simply because historical pianos did not produce the same sounds.[48] The sound that we are used to today on a modern piano, especially in terms of romantic repertoire, is different from that of the nineteenth century, mainly due to the instrument. The modern techniques used on modern piano did not include the techniques for *p* or *pp* on the fortepiano, and furthermore, the soft dynamic levels of the fortepiano could not be realized on a modern piano due to advancements in the instrument. These soft dynamic levels lie beyond the range of the modern piano and thus became an unchartered territory for modern pianists (see Figure 5.10.). Therefore, one needs to expect a different sound and to also use a slightly different approach in playing a historical instrument.

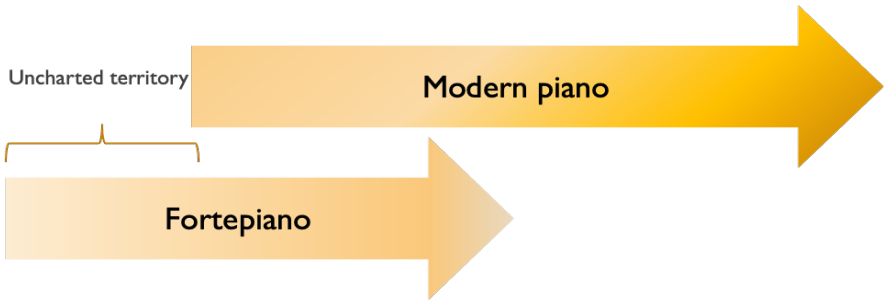


Figure 5.10. Figurative comparison between dynamic levels of modern pianos and fortepiano (not to scale).

[48] Edmund M. Frederick, 'The "Romantic" Sound in Four Pianos of Chopin's Era', *19th-Century Music*, 3.2 (1979), pp. 150–53 (p. 150), doi:10.2307/746286.

To better illustrate this phenomenon, the difference in dynamics was observed while playing on the Dereck Adlam fortepiano (29th of March 2023), after which I wrote:

> In terms of dynamics, I think these techniques help us adapt to the dynamic range that is appropriate to the instrument instead of expecting the instrument to react like a modern piano. If one uses the modern approach, they will be pushing the limits of the piano, forcing the dynamics to the extreme, which will only hinder the production of optimal or desirable tones (see below, Video 5.4). Using concepts that were emphasized in nineteenth-century techniques such as keeping a quiet hand and focusing on the finger joints make the exploration of different soft qualities of tones from the fortepiano possible (see below, Video 5.3) although it was not easy (coming from a background of a modern pianist). I sometimes practice a small section with gentle touches that do not really involve larger muscle groups like the arm or elbow, but incorporating this into my playing is still a challenge. This is because these sensitive dynamics were significantly softer and more delicate than the soft tones that we produce using *una corda* on a modern piano. The correlation or reciprocity between the touch used and the tones produced using nineteenth-century techniques were beyond the typical control and techniques of how we usually play on a modern piano.



Mozart - Sonata in D, K. 576, 3rd Movement, bars 114–116 LH (Hummel's Technique)

Video 5.3. Playing arpeggio passage with nineteenth-century technique.



Mozart - Sonata in D, K. 576, 3rd Movement, bars 114–116 LH (Own Technique)

Video 5.4. Playing arpeggio passage with my own technique.

5.3.5 Phrasing

The nineteenth-century techniques, apart from guiding us to the suitable effort and dynamic range of the instrument, also indirectly affect the phrasing through different hand movements. A different approach in shaping a phrase and the sense of direction in a phrase were evidently demonstrated in the video recording that I took during my practice on the Dereck Adlam fortepiano (see below, Video 5.6) and also when I

performed on a modern grand piano (see below, Video 5.5). I noted in my reflection log from 29th March 2023:

> After two days of using the fortepiano, I think I discovered something more in-depth — the relationship between the performer and the performance when using nineteenth-century techniques. Through my experience, I think these techniques provide a different approach for phrasing music and offers an alternative to creating soft dynamics that we are not used to. While I remember using the elbows and wrists to phrase the first movement of the sonata especially at the end of the phrase (on a modern piano), when I was using nineteenth-century techniques and tried to phrase them the same way, I realized that I am only phrasing the music with my fingers at the end of a phrase, instead of using a scooping action of the arm to phrase it, resulting in a different direction of phrasing the music as well. Modern techniques would present a forward-pushing effort in showing the direction of the phrase, while the nineteenth-century techniques were rather lifted and straight forward, without too much push.



Mozart - Sonata in D, K. 576, 1st Movement, Grand Piano

Video 5.5. Mozart's Sonata in D, K. 576, first movement played on a modern grand piano in Riverstown Hall, Maynooth University.



Mozart - Sonata in D, K. 576, 1st Movement, Dereck Adlam Fortepiano

Video 5.6. Mozart's Sonata in D, K. 576, first movement played on Dereck Adlam Fortepiano of the Cambridge University Instrument Collection.

My usual way of shaping the phrases of the first movement of Mozart's Sonata in D, K. 576 involves extending the elbows and lifting the wrists, especially at the first few phrases (see Video 5.5, 00:04–00:05, 00:07–00:08, 00:26–00:27, etc). As a result of using my own techniques, the phrase endings were slightly stretched due to the hand movements where the elbows extend outwards. These movements resulted in a rather circuitous approach that gave an illusion that the phrase endings were slightly extended, and long notes were emphasised. However, due to the emphasis on the fingers and finger joints, and the omission of large movements such as the extension of the elbow and lifting the wrist and arm when applying nineteenth-century techniques, I resorted to relying on mostly the fingers for phrasing (refer to Video 5.6, 00:06–00:07, 00:12–00:13, 00:24–00:25, etc). While my old habit of stretching the phrase endings can still be vaguely felt, the historical techniques that did not include extraneous movements, little by little, guided me back to the more direct approach of the nineteenth century. I believe it helps us eliminate superfluous aspects of our playing that we gained in the later period, and regain the rudimentary,

simplistic, and natural playing style. Historical techniques with direct movements did not dwell on these notes, but rather propel forward to the next phrase of the music.



Figure 5.11. Bars 27 to 29 of Mozart's Sonata in D, K. 576, first movement.
Copyright 1986 by Bärenreiter-Verlag and NMA Online, published by the Mozarteum Foundation Salzburg in collaboration with the Packard Humanities Institute, 2006ff. Musical example/s reproduced with kind permission of the Mozarteum Foundation [accessed on 22 September 2024]

In another example, my own technique on modern pianos that shaped the direction of the phrase from upbeat to bars 28 to 29 (see Figure 5.11) was done through a slight *crescendo* within the phrase towards the highest note E^6 (see Video 5.5, 00:45–00:48). When applying the same intention on a fortepiano, it was affected by the application of nineteenth-century techniques where the direction of the phrase shows lesser of a push but presented a more straightforward approach without much *crescendo* built within the phrase (see Video 5.6, 00:43–00:47).



Figure 5.12. Bars 96 to 98 of Mozart's Sonata in D, K. 576, first movement. Copyright 1986 by Bärenreiter-Verlag and NMA Online, published by the Mozarteum Foundation Salzburg in collaboration with the Packard Humanities Institute, 2006ff. Musical example/s reproduced with kind permission of the Mozarteum Foundation [accessed on 22 September 2024]

In playing semiquavers in a moderate or quick tempo, I always incorporate minute finger movements without much use of the wrist or the arm to avoid bumps or stuck notes. I also noticed that when focusing on historical techniques that mainly use light fingers, there was less accentuation of notes, especially on the strong beats on the fortepiano. In Video 5.5 (at 4:08–4:11), I accentuate the stronger beats where a heavier tone can be heard on the first note of every group of the semiquavers on the modern piano (see Figure 5.12 circled in blue). The fortepiano, by contrast, creates a smoother line (Video 5.6 at 4:03–4:07). In the case of the right-hand part of bars 97 and 98, the descending contours of the right-hand part were more apparent.



Figure 5.13. Bars 137 to 146 of Mozart's Sonata in D, K. 576, first movement.
Copyright 1986 by Bärenreiter-Verlag and NMA Online, published by the Mozarteum Foundation Salzburg in collaboration with the Packard Humanities Institute, 2006ff. Musical example/s reproduced with kind permission of the Mozarteum Foundation [accessed on 22 September 2024]

From bars 138 to 143 where the texture of the music was more contrapuntal, I performed *forte* at the upbeat to bar 138 on both modern and historical piano, without surprise, while both were *forte*, the timbre was different. However, in bar 139 where the right hand has descending semiquaver patterns, these semiquavers were organized and played quite mechanically where the strong beats can be clearly felt on the first note of each set of semiquavers, with each individual note more clearly executed with my own techniques (refer to Video 5.5 at 5:14–5:24). When using historical techniques, these quavers rolled downwards, with the tempo slightly pushed forward as if they were surging waves, especially with the help of the left

hand where it starts with an ascending skip before moving downwards, which also happened in the second half of the bar. It gave an impression of one wave followed immediately by another before merging as the descending semiquavers occured twice in a bar (refer to Video 5.6 at 5:08–5:17 ). The minute finger action of the historical technique would help group the first six semiquavers into one movement, and the next six into another, as opposed to how I played it on a modern piano with my own technique where each semiquaver was treated individually, ensuring even tones.

When one considers the broader perspective, I performed on the modern piano with a very long phrasing from the upbeat to bar 138 all the way to bar 143. While this long phrase can be divided into three parts of two bars per section, it was not clearly executed especially in the last four bars of the section as they sounded as if they were one section. As I prepared this on a modern piano before trying these pieces on a historical piano, I phrased this section similarly on a historical instrument. However, the three parts of the larger phrase can be more clearly heard due to the texture of the composition, and the difference in techniques applied on these different textures, as well as the tone colours of the fortepiano. When playing the quaver sections, the techniques used were similar to those on a modern piano. In playing the semiquavers, the smaller movements of the fingers used created the effect mentioned above, separating the quavers from the semiquavers, and in a way, helped clarify the three smaller sections of the long phrase.

Moving forward to bar 144 where the same musical idea was presented twice, with the second time played an octave higher in bar 146, these phrases were also performed differently on modern and historical pianos. I focused on presenting this section by highlighting the timbre from different octaves on the fortepiano. Therefore, on top of the already strikingly different timbre between the registers of the fortepiano, I used more finger action for the section on lower register, and much lesser finger action on higher register, as I hoped that it may lead to an extra delicate sound especially with the distinctive timbre of each register (Refer to Video 5.6 at 05:17  and Video 5.5 at 05:23 ).

Despite my limited experience on historical instruments, the response to the micro level touches of the fingers was the contrasting change in tone and dynamics from a powerful tone to a thin and delicate character that was absent in modern pianos. These experiences not only helped me navigate the capacity of the instruments or provide a different approach to performing, but it also showed possible reasons behind composing the same musical idea an octave higher, offering insights beyond dynamics and phrasing.

5.4 Discussion and Reflection

5.4.1 Restrictions Reversed

Due to the lack of access to historical instruments, I would apply and practice the historical techniques on a modern piano before my historical piano visits; the difference created by these techniques were usually less significant, and the process would be more of a struggle at times because of the heavy keys. However, when I played on the Pleyel piano using Deppe's techniques during my second visit to The Richard Burnett Collection, I felt that using historical techniques on a historical instrument was much easier than using them on a modern grand piano. This was because I did not need to exert as much force onto the keyboard as too heavy a touch would then create a stiff sound, just as Edith J. Hipkins noted that Chopin positioned his elbows close to the sides of his body and only played using fingers but was able to create a full and pure *fortissimo* sound that was not harsh.[49] She published her father's reminiscences, describing the way Chopin played the *Andante Spianato* Op.22 as such:

> His *fortissimo* was the full pure tone without noise, a harsh inelastic note being to him painful. His nuances were modifications of that tone, decreasing to the faintest yet always distinct *pianissimo.* His singing *legatissimo* touch was marvellous. The wide extended arpeggios in the bass were transfused by touch and pedal into their corresponding sustained chords, and swelled or

[49] Edith J. Hipkins, *How Chopin played. From Contemporary Impressions collected from the Diaries and Notebooks of the late* A. J. Hipkins (I937), p. 5, cited in, Jean-Jacques Eigeldinger, *Chopin: Pianist and Teacher: As Seen by His Pupils*, ed. by Roy Howat, trans. by Naomi Shohet, Krysia Osostowicz, and Roy Howat (Cambridge University Press, 1986), p. 65.

> diminished like waves in an ocean of sound. He kept his elbows close to his sides, and played only with finger-touch, no weight from the arms.[50]

Therefore, historical techniques that were restrictive on modern grand pianos were in fact more effective on historical instruments. The lighter keys of historical instruments also helped in that regard. After attempting the Pleyel piano for the second time, where I used mostly Deppe's techniques especially on right hand melody (see Video 5.7), I noted in my reflection log on 17th February 2023:

> I played using Ludwig Deppe's feather-light hand technique and tried to keep the touch lighter. I tried to hang the hand from the wrist and carry the hand and forearm from the upper arm and play without a blow from the finger (mostly). It was actually sufficient, but I feel the piano could take a little more than that if it was in good condition but that would be pushing the piano's limit. I can understand why Chopin said that one can mould or shape the tone on the Pleyel while the Erard has a ready tone, and that he would play on the Erard when he was tired.[51]

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[50] Edith J. Hipkins, *How Chopin played. From Contemporary Impressions collected from the Diaries and Notebooks of the late* A. J. Hipkins (I937), p. 5, cited in, Jean-Jacques Eigeldinger, *Chopin: Pianist and Teacher: As Seen by His Pupils*, ed. by Roy Howat, trans. by Naomi Shohet, Krysia Osostowicz, and Roy Howat (Cambridge University Press, 1986), p. 65. Alfred James Hipkins (1826-1903) was Chopin's piano tuner and has heard Chopin's playing. His reminiscences of Chopin's playing were then published by his daughter, Edith J. Hipkins. See p. 93.
[51] Moritz Karasowski, *Friedrich Chopin. Sein leben, seine Werke und Briefe,* 2 vols (1877), II, p. 96, cited in Jean-Jacques Eigeldinger, *Chopin: Pianist and Teacher: As Seen by His Pupils*, ed. by Roy Howat, trans. by Naomi Shohet, Krysia Osostowicz, and Roy Howat (Cambridge University Press, 1986), p. 26.



Chopin - Andante Spianato, Pleyel fortepiano (Deppe's technique)

Video 5.7. Chopin's *Andante Spianato* played on Pleyel fortepiano at The Richard Burnett Collection with Deppe's techniques.

On one occasion when I applied too much force on an Erard and then reverted to historical techniques; I felt something different from what I usually experience on a modern grand piano. I noted in my reflection log after my visit:

> I find (at some sections) it was easier for me to creep into using historical techniques or adopting some concepts of historical techniques than using my own techniques, which was the opposite of playing the same piece on a modern piano. I believe this has something to do with the keys on the Erard, there was less resistance than the modern piano, and this was especially felt after witnessing the tone produced with excessive force. I do not need to go to the lengths of the vigorous movements or forceful attacks that were used on a modern piano.

On the last day of my visit to try out the Dereck Adlam fortepiano (29th March 2023), I wrote:

One of the most important observations would be that these techniques that I once considered restrictive and weak on a modern grand piano were not at all restrictive on a fortepiano as I was able to practice for hours using these techniques. By contrast, they are vital to these instruments and much suited to the light keys.

Therefore, the restrictive, and sometimes weak sensation from attempts of nineteenth-century techniques on the modern piano are in fact, reasonable and more applicable on a historical instrument. Not only that, when paired together, the relevance, relationships, and logic behind these techniques became self-explanatory.

5.4.2 Technique as a Guide

An important detail uncovered from this research was how technique in this case became the ‘measuring stick’, providing the frame of reference for the appropriate effort and dynamic range for the instrument. This impression was also observed after my attempt on Erard and Pleyel piano, where I noted down some points regarding the relationship between techniques and instrument that I acquired.

After this experience, while I thought using these historical techniques on modern pianos was restrictive, using modern techniques on historical instruments would also make us feel confined or restrained. For example, having practiced all this while on a modern piano, I would want to play a loud section with all the energy that I reserved for that section, but it would end up feeling anticlimactic as I only applied, say, a quarter or a half of the force onto the Erard. As the instrument does not require that much force, there is a slight sense of detachment between my

intended input and the actual result from the instrument, where the climactic section did not produce the grand statement as practiced or expected. Due to the changes in the effort-dynamic relationship, we need to reconfigure and re-evaluate our approach and adapt them according to the instrument at hand.

Through this study it becomes obvious that techniques provide a rough concept of the potential of the instrument and help the performer explore its possibilities. For example, the early-nineteenth-century techniques lead us to perform without extraneous body and hand movements to enable the use of micro control efforts, which suits the light and responsive touch of the instrument. From the perspective of a modern pianist, it helps one forgo unnecessary movements of the hand and arms, and to recalibrate and adjust the focus towards the fingers and finger joints, which would be a better match to the optimal range of an early-nineteenth-century fortepiano. The advancement of techniques which explores the use of wrists and hand in the late-nineteenth century, although is still far from what we know today, showed how the development of techniques go hand in hand with the advancement of the instrument as well.

At times, the role of techniques as a guide happens more than we know. Ishimura, through her personal experience on the historical pianos in search of new knowledge that can inform her approaches in performing on the modern piano, noticed a change in her hand position and movements from a more rounded shape of the palm with perpendicular finger and a higher wrist, to flatter fingers (not as perpendicular) and a lower positioned wrist due to her urge to hold the notes longer and maintain a stronger *legato* to mitigate the shorter decay of tones on the

fortepiano.[52] The change in hand position enabled her to hold the notes with the finger for slightly longer, overlapping the second note with the first, producing a smoother *legato*. While it was the faster tone decay of the fortepiano that instinctively led her to position the wrist lower, this specific hand position was also coincidentally one of the late-nineteenth-century techniques taught by Theodore Leschetizky, where he emphasized placing the wrist low and explored the use of wrist by lowering and raising it.[53] While the low wrist hand position can also be used on the modern piano today, it hardly provides such insights obtained by Ishimura as it has a much better ability in sustaining notes. The link between the instrument and the techniques taught are very tightly intertwined, and these relationships emerge through the experience on a historical instrument.

5.4.3 Overlapping Set of Techniques

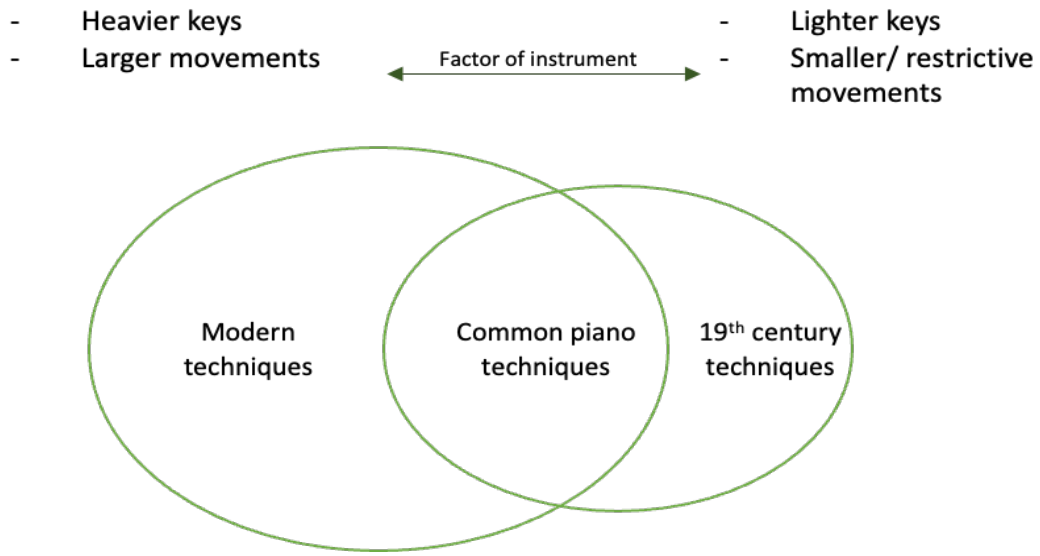


Figure 5.14. The relationship of techniques and instruments.

[52] Ishimura, 'Creating a New Interpretation of Chopin's Piano Music Using a Comparison of Modern and Historical Instruments through the Performance of the Second Piano Sonata', pp. 61–62.
[53] Brée, *The Groundwork of the Leschetizky Method*, pp. 3–4.

Techniques for modern pianos and techniques from the nineteenth century can be considered an overlapping set with an intersection of common techniques (refer to Figure 5.14). When we look at the seating position and techniques from the late-eighteenth or early-nineteenth century, it feels familiar to what we have. However, certain playing techniques from the nineteenth century have progressively been discontinued with the advancement of the instrument, while modern techniques were slowly developed. The nineteenth-century techniques that were not carried forward onto the modern piano were typically techniques that were more restrictive and were catered towards very delicate touches and light keys that are no longer realistic on the modern piano. Conversely, the developed modern techniques were only played on the modern piano which is much heavier compared to the nineteenth-century historical piano as they are far too powerful for the older instrument. Ishimura mentioned that it is more common to see fortepianists perform on both historical instruments and modern instruments than to see modern pianists on a historical instrument. She further stated that when concert pianists perform on a historical instrument, they tend to perform as one would on a modern piano, which then leads to an ineffective way of drawing out the distinctive timbre of historical instruments.[54] This again showed the roles of the different techniques needed on different instruments. One can only assume that the same situation would occur if the roles were reversed. Fortepianists who were only trained on historical instruments may also face difficulty playing a modern concert grand piano equipped with heavy keys. Therefore, when reimagining the use of nineteenth-century techniques on historical instruments from the perspective of a modern pianist, it is not what was

[54] Ishimura, 'Creating a New Interpretation of Chopin's Piano Music Using a Comparison of Modern and Historical Instruments through the Performance of the Second Piano Sonata', p. 40.

similar that helped us approach the fortepiano, but rather what needs to be moderated.

5.5 Conclusion

Applying these researched historical techniques to historical instruments has offered deeper insights into this research, leading to the discovery of other aspects involved in a performance. The learnings discussed above, especially in terms of phrasing and dynamics, could not have revealed themselves to a modern pianist if not for the first-hand experience of historical techniques on historical instruments. Learning historical techniques and applying them on appropriate historical instruments, placed us in the shoes of these pedagogues, or as the students of these pedagogues, as though we were having lessons on how to approach the instruments by studying the instructions they passed down, although the approach tends to be rather one-sided without having feedback or communication from them. It is hoped that this study could help modern pianists enhance their impression and perception of these playing techniques by offering a perspective into the playing techniques of the nineteenth century as well as some of the possible notions behind them. While the nineteenth-century techniques may not be transferred directly onto a modern piano, this study recorded the initial learning experiences of applying historical techniques on historical pianos as a modern pianist, clarified the role and function of these techniques, and at the same time shared the experiences of interacting with these instruments. The impact of these techniques on other elements such as dynamics and phrasing, as well as the presented approaches to performing on historical instruments also provided new perspectives on the relationship between instruments, techniques, and the performer. This chapter includes not only different approaches, but also the

response of the instruments that may be valuable to modern pianists who would like to attempt playing a historical piano. At the same time, it also contributes, in some ways, towards historically informed piano performance.

A historically informed performance (HIP) in general takes into consideration all useful information of faithfulness to historical accuracies such as historical background, musical treatises, reviving performance practices, historical instrumentation, and many more. For such an endeavour, using a historical instrument offers the basic components such as the tones, timbre, and tuning of the instrument. Meanwhile, the application and context of historical techniques, would serve as additional components alongside aspects such as performance practices or fingerings, that help performers construct a multifaceted historically informed performance.

These historical techniques taught me to not just scale down the techniques that I am currently using but offered another way of playing to embrace the instruments at hand and an alternative solution to us modern pianists for their music. These exploratory actions have allowed me as a modern pianist to delve into the subtle nuances, shadings, touches that were offered by historical instruments with the help of historical techniques. While my own techniques would easily let me play in the louder extremes of a historical piano, the historical techniques helped in revealing the other end of this extreme by using more subtle nuances and gentler approaches that produce different effort-dynamic relationships.

It also develops the artistic ability of a pianist by expanding my range of dynamics, presenting different solutions of playing approaches to the music that I encounter, and most importantly, by developing the versatility of tone colours and touches that grow with each experience. Furthermore, the historical techniques that were considered ‘restricting’ and ‘limiting’ at first also facilitate improvements in precision of action, preventing incorrect notes from excessive or unintended movements in piano playing, which not only applies to historical piano playing but also to modern pianos.

Historical techniques help modern pianists adapt to using historical instruments, allowing them to enjoy and embrace the different tone colours offered by each register, the array of dynamic levels, and the various ways of grouping notes that would lead to alternative phrasings. While this study offers insights to the initial stages of applying historical techniques on historical instruments, the embodiment process and one’s experience on these instruments, if continued over a longer timeframe, may lead to even more discoveries and further insights.

Chapter 6 Interweaving the Past in the Present

6.1 Assimilating Historical Techniques into Modern Piano Playing

The music editors of the nineteenth century and musicians in the early music scene depict two different practices in music performance, where the former revise and edit old music of their time to suit contemporary tastes and instruments, while the latter apply specialised expertise on historical instruments to produce historically informed performances.[1] However, a new balance or middle ground is being explored by the likes of Brietman and Gunn, where insightful knowledge, playing styles and performance practices obtained through playing on the fortepiano are considered on the modern piano.[2] Breitman explained his stance of finding the middle ground through his book and stated:

> A performance is not a history lesson, and the insights from period instruments can't always be applied directly to the modern piano. But historical specialists can be valuable allies, and old instruments offer a fresh view of the score, opening your ears and eyes to new sounds and new ideas.[3]

To further develop this 'middle ground', a closely related subject — the historical techniques that accompany historical instruments — play an important role in providing us with the necessary perspectives on performing on these instruments.

[1] David Breitman, *Piano-Playing Revisited: What Modern Players Can Learn from Period Instruments* (University of Rochester Press, 2021), pp. 3–7.
[2] Ibid.
[3] Breitman, *Piano-Playing Revisited*, p. 7.

While using historical instruments is comparable to using 'the composer's creative tool' to 'produce a correct interpretation',[4] historical techniques would allude to the contemporary methods of the pedagogues and composers in approaching these tools. In other words, while historical piano is described as the 'tool', historical techniques present us with an opportunity to learn the composers' or pedagogues' skill sets through their method of approaching the historical instruments, providing a window into their perspectives on these instruments. It also tells us why pedagogues or composers use the techniques that they advocate. In historically informed performance (HIP), historical instruments were at times also said to help performers execute the composer's intention more easily.[5] If so, historical techniques can act as a bridging aid that can help realise those intentions even more effectively through the minute nuances, approaches, and techniques used in their music making.

Having realised the function and role of historical techniques on historical instruments in the previous chapter, this chapter attempts to discover what historical or historically informed techniques can offer to the 'middle ground', where many modern performers stand, and discuss the incorporation of historical techniques on a modern piano along with its effects. This chapter will present the pieces in the following order:

i. Beethoven's Piano Sonata No 21 in C major (First Movement) as assimilated with Czerny's techniques,

[4] Breitman, *Piano-Playing Revisited*, p. 7.
[5] Breitman, *Piano-Playing Revisited*, p. 7.

ii. Chopin's *Andante Spianato et Grande Polonaise Brillante* integrated with elements of Leschetizky's and Deppe's techniques,

iii. Mozarts's Sonata in D, K. 576 (First Movement), incorporating tinges of Hummel's techniques.

This sequence is intended to present the techniques that are most readily assimilated first, before progressing to those that require a greater degree of adaptation, and would result in more significant changes. By the end of this chapter, it is hoped that the concepts and approaches informed by historical techniques, incorporated into my modern piano playing, can provide a new perspective into the three pieces that were used in this research.

6.1.1 Expanding the sensitivity of touch

C. P. E. Bach once stated that 'the more recent pianoforte, when it is sturdy and well built, has many fine qualities, although its touch must be carefully worked out, a task which is not without difficulties.'[6] This highlights the importance of historical techniques. However, we may ask how then, does the touch of a fortepiano relate to that of the modern piano given the differences between the two instruments?

When exploring the sensitive touch required on a historical piano, the effort used is minimal. In fact, it is the sensitive touches that helps us avoid bumps, unwanted accents, or accidental notes caused by unconscious extraneous movements, or tension, that leads to overplaying on historical instruments. As Kobb mentioned, the 'required restraint of movement is a challenge to a performer',[7] to which I concur

[6] Carl Philipp Emanuel Bach, *Essay on the True Art of Playing Keyboard Instruments,* trans. by William J Mitchell, 1st Ed (W.W. Norton, 1949), p. 36.
[7] Christina Kobb, 'Piano Playing in Beethoven's Vienna: Reconstructing the Technique, Exploring Its Musical Application' (unpublished doctoral thesis, Norwegian Academy of Music, 2022), p. 139.

upon attempting performance on historical instruments. The act of manipulating the smaller parts and muscles of the hand delicately, while at the same time releasing the tension that comes with it can be contrary to what we are used to when approaching it from the background of modern piano playing. It is a consideration we need to keep in mind and overcome when playing on a historical piano. Very often, the movements or actions needed were minimal compared to those used on a modern piano. In using these historical techniques, the hands are liberated from the extra weight from the body, allowing fingers the freedom to demonstrate their capabilities in fast, running, or technical passages.

As a modern pianist, when we are accustomed to a heavily practiced instrument, the playing process becomes instinctive, especially in terms of how much force to apply and what sound to expect, without the need for conscious attention to the connection between the two. As the touch on the fortepiano is very direct with a responsive attack, this new tactile sensation of touch on the fortepiano is often foreign to modern pianists and would immediately declare its difference and importance. When playing on a fortepiano, we can almost feel the connection between the attack from the finger to the string and the sound produced, which is not as transparent on a modern piano. The sensitive and somewhat transparent touch of a fortepiano forces us to rethink our approach, be aware of our fingers, to be more conscious about the amount of force to exert, the playing speed of our fingers, and at the same time, learn to relax our hands and embrace the unfamiliar approaches.

As noted previously, it is more common to use relatively larger movements and actions on the piano as even single line melodies require projection, let alone

louder dynamics or striking sounds that demand larger hand parts and muscles leading to a bolder tactile experience with bigger input and output. Historical techniques such as those by Hummel and Czerny, which focused on finger actions, offer a different perspective in passages such as running notes or light articulations especially on a historical instrument, providing an entry point for modern pianists to attempt these micro level actions on a modern piano. In return, these historical techniques produce minute nuances and sensitive sensations that are rarely experienced on a modern piano. The techniques that do not use the momentum of the hand, but small finger actions or nuances, enable us to be more sensitive to tactile sensations, and also expand the sensitivity of touch on any piano.

When returning to the modern piano, I was inspired to transfer not only the techniques used on historical instruments, but the experiences and insights gained as well. The fingers were tempted to play in the same way, using only minimal effort, expecting it to be sufficient and for the same sound to be produced. However, I soon realise how an exact transfer would not be possible due to the heavier keys on the piano. After repeating the process a few times, the idea that different techniques and approaches were more suited for different instruments was further proven as I would find myself needing time to get used to the heavier keys of the modern piano, and reverting to using the strength needed, especially for loud sections on a modern piano. On one occasion where I played Beethoven's Waldstein Sonata on a modern piano the day after immersing myself with a fortepiano, I received a comment — the Waldstein I played sounded like Mozart. When returning to the modern piano, these historical techniques automatically became 'too weak', and our ears being used to the volume of a modern piano would interpret it as insufficient or even hollow.

However, incorporating these light touches into my own techniques provides a different approach to soft dynamics.

It is these tactile sensations that prompted a more thorough exploration of the soft and sensitive touches available on the modern piano. While historical techniques may not map directly onto the modern piano, their concepts and ideas can be assimilated into our own techniques that we already embody on a modern piano, contributing to the exploration of the dynamics, timbre and tone produced.

6.1.2 Historical Techniques and the Modern Piano

Returning once more to its modern counterpart, the techniques that once seemed foreign, now carry the kinaesthetic experiences and familiarity acquired from the fortepiano. With careful consideration, Deppe's feather-light arm and Leschetizky's wrist techniques were applied onto Chopin's *Andante Spianato* and *Grande Polonaise*, while Czerny's finger technique and Hummel's techniques were incorporated into Beethoven's Waldstein Sonata (first movement) and Mozart's Sonata in D, K. 576 (first movement) respectively on the modern piano.

When incorporating these techniques, they were not replicated in their entirety but rather, their underlying concepts were extracted and assimilated into modern piano playing. For example, Hummel's hand and elbow posture, that requires the arm to be kept near to the body, is better suited for lighter keys and a smaller range such as the 5-octave fortepiano. Consequently, this posture was not adopted, but the concept of the light fingers and hands without extraneous movements was duly considered. Deppe's feather-light hand that retains the weight

of the hand and what Kobb referred to as a 'weight-off technique'[8] were also incorporated. However, the restrictions of the elbow were acknowledged but not strictly adhered to, given the modern piano's heavy keys and broader range.

[8] Kobb, 'Piano Playing in Beethoven's Vienna', p. 139.

6.2 Beethoven's Sonata in C major, Op. 53, First Movement (Waldstein)

An example of a technique that seamlessly translates to the modern piano is Czerny's finger technique. Given the popularity of Czerny's technical finger exercises, which remain widely practiced, it is evident that the fundamental principles underpinning Czerny's techniques still hold considerable relevance today.

While these finger techniques can be applied on a modern piano, it is essential to acknowledge the difference in capability between historical and modern instruments. In this context, Czerny's perpendicular finger technique may not be employed to the same extent or with equivalent force on both instruments. The perpendicular action of the fingers can be applied to a much stronger degree on a modern piano. Conversely, applying the same level of effort onto an early nineteenth-century fortepiano could potentially cause damage to it. However, in the modern context, the perpendicular technique seamlessly integrates itself into the Waldstein sonata and also on the modern piano. In discussing why this is the case, I suggest that we take a step back before delving into the demonstration of Czerny's techniques on the Waldstein sonata, and start by considering the instruments used by Beethoven when composing this piece.

Sketches of the Waldstein Sonata were among the several hundred sketches in Beethoven's Eroica Sketchbook that were dated to around December 1803 and the beginning of 1804 .[9] Incidentally, the date recorded in Erard's sales book documents

[9] Rachel W. Wade, 'Beethoven's Eroica Sketchbook', *Fontes Artis Musicae*, 24.4 (1977), pp. 254–89 (pp. 254–70), <https://www.jstor.org/stable/23506383>.

the sale of Beethoven's Erard for 1500 livres on the 6th of August 1803.[10] Tilman Skowroneck believed that the Waldstein Sonata is the first major composition by Beethoven after acquiring his Erard, and believed that this piece was directly inspired by Beethoven's new Erard.[11] However, he mentioned that some fortepianists thought that 'while the sonata was perhaps written with Erard piano in place, it was not with the piano in mind'.[12] In all scenarios, the evidence from the date of sale of Beethoven's Erard piano and the date he composed the Waldstein sonata supports the thought that the sonata was strongly linked to the Erard piano. By studying Czerny's techniques that were taught by Beethoven, this research will further confirm and strengthen the connection between them and show why it is possible to seamlessly incorporate Czerny's techniques on the modern piano when playing the Waldstein Sonata.

In the famous letter dated 2 January 1805 by Andreas Streicher (piano maker, and Nannette's husband) that scholars commonly use when discussing Beethoven's Erard, he said：

> Beethoven is certainly a strong player, yet he still is unable to treat his Fp. [fortepiano] adequately, which he got from Erard in Paris, and he has already

[10] Rose van Epenhuysen, 'Beethoven and His 'French Piano': Proof of Purchase', *Musique, images, instruments: Revue française d'organologie et d'iconographie musicale,* 7(2005), pp.111–22, cited in Tom Beghin, *Beethoven's French Piano: A Tale of Ambition and Frustration* (The University of Chicago Press, 2022), p. 11.
[11] Tilman Skowroneck, 'Beethoven's Erard Piano: Its Influence on His Compositions and on Viennese Fortepiano Building', *Early Music*, 30.4 (2002), pp. 523–38 (p. 530–31), doi:10.1093/em/XXX.4.523.
[12] Ibid., p. 531.

had it changed twice without the least improvement, because its construction is not suited for any other action.[13]

While the previous chapters have already established that Czerny's finger technique was already stronger than his contemporaries' such as Hummel, it seemed that Beethoven's technique may not have fully aligned with the characteristics of his Erard. As modern pianists are more accustomed to heavier keys and larger instruments, it is a norm for modern pianists to exert more force onto the keys. However, Streicher's words showed the frustrations of Beethoven and hinted that the piano was too heavy for him even though his existing technique already involved putting in more force and a heavier touch than his contemporaries on the Viennese fortepiano. Tom Beghin when describing Beethoven's entanglement with his Erard piano, he stated that:

> Ultimately, Beethoven is not capable of embracing his French piano entirely. Long familiarity with Viennese pianos leads him to complain about its heavy touch and to miss the articulatory precision he's used to. Perhaps unavoidably giving in to local custom, he engages a Viennese builder to undertake a series of technical revisions, creating some kind of hybrid between French and Viennese technology.[14]

Beethoven's frustration could have arisen from various factors. Perhaps it is due to the heavier touch required or the stronger techniques needed to complement the

[13] Wilhelm Lütge, 'Andreas und Nannette Streicher', p.65, cited in Skowroneck, 'Beethoven's Erard Piano', p. 526.
[14] Tom Beghin, *Beethoven's French Piano: A Tale of Ambition and Frustration* (The University of Chicago Press, 2022), p. 19.

powerful piano. It could also be because the results of the piano did not meet his expectations as Beghin stated. Regardless of the circumstances, the perpendicular finger action remains an important point of consideration in this case.

While Beghin believed that Beethoven became unsatisfied with the speed and articulatory effect of the sound produced even though the Erard initially provided him an opportunity to explore new playing styles,[15] he also compared the guidelines on seating, arms, and fingers instructions by Andreas Streicher (in Vienna) and Louis Adam (a professor at the Paris Conservatoire), and came to the same conclusion that even though both use only fingers without much help of the arm or shoulder, the main difference can be seen through the finger actions and movements instructed.[16]

Streicher's instructions stated that '[t]he finger must not be held far above the keys before the stroke, since a finger falling from too great a height makes a small noise during the attack, robbing the tone somewhat of its purity'.[17] It is also mentioned that '[a] key must not be touched before the moment in which the sound should be heard, for even the slightest weight [of the finger] will push the key down somewhat, causing the beak of the hammer to begin forcing backward the pivoted escapement'.[18] By contrast, Adam mentioned that 'it is necessary that all fingers are placed at the same time on the surface of the keys that one will have to make sound, so that they are ready to strike; then one will lift the fingers a little above the

[15] Beghin, *Beethoven's French Piano*, p. 23.
[16] Beghin, *Beethoven's French Piano*, pp. 56–57.
[17] Andreas Streicher, *Brief Remarks on the Playing, Tuning, and Maintenance of Fortepianos Made in Vienna by Nannette Streicher, née Stein*, p. 47, cited in Beghin, *Beethoven's French Piano*, p. 59.
[18] Ibid.

keyboard, but without extending them […] and one will make them fall perpendicularly and successively on the indicated keys'.[19]

While Adam's treatise was not included in this research, his instruction on finger technique is similar to that of Czerny's — emphasizing perpendicular movement of the fingers. In terms of techniques, it is understandable that even though Czerny's techniques, which were taught by Beethoven, are similar to those of Louis Adam, Beethoven's techniques may still be lighter because they were previously performed on mainly Viennese fortepiano prior to acquiring his Erard. This was also similarly observed through the experience on historical piano. My previous experience on the Graf piano has established that the techniques with perpendicular finger movements used on a modern piano were a much-fortified version of Czerny's techniques. Nevertheless, one could surmise that the perpendicular finger techniques endorsed by Czerny can be enlarged and seamlessly incorporated onto the modern piano because the keys of the Erard are stronger compared to a Viennese fortepiano, and thus allowing the techniques used on the Erard to be more easily transferred to a modern piano. Below is the video link of Waldstein (first movement) played on a modern grand piano once again after experiencing historical techniques on historical instruments.

[19] Louis Adam, *Méthode de piano*, p. 8, cited in Beghin, *Beethoven's French Piano*, p. 59.

Beethoven’s Piano Sonata No. 21 in C major (Waldstein), First Movement, Modern Grand Piano

Video 6.1. Beethoven’s Piano Sonata No. 21 in C major (Waldstein), First Movement, played on a modern grand piano in Riverstown Hall, Maynooth University.

While it is important to note that Czerny’s finger technique might not seamlessly apply to all sections of the Waldstein, the concept of perpendicular finger action can indeed be adapted for use on the modern piano. Leveraging the sturdiness of the modern piano that can withstand more vigorous touches, the perpendicular finger technique can be used with much greater force. Prior to experiencing these techniques on a historical piano, I was accustomed to employing the momentum of the hand by means of a throwing action on the downbeats of semiquavers to accentuate passages when performing the Waldstein Sonata. To fully realise its potential, the momentum of the hand on downbeats can be combined with the perpendicular action on semiquavers. This yields an even more powerful touch on the modern piano. The posture of the straight hand, maintained from the elbow to the finger knuckles also came naturally to me and can be seen in various passages of the Waldstein Sonata. For example, the straight arm posture was consistently applied when performing the beginning section of the piece.



Figure 6.1. Bars 14 to 19 of Beethoven's Piano Sonata No. 21 in C major (Waldstein), First Movement. (Copyright 1976 G. Henle Verlag)



Figure 6.2. Bars 26 to 31 of Beethoven's Piano Sonata No. 21 in C major (Waldstein), First Movement. (Copyright 1976 G. Henle Verlag)

In modern piano playing, the utilisation of forearm rotation is a common technique, especially in the exposition of the Waldstein Sonata where there are many alternating notes. This was necessitated by the speed of the passages and the heavy keys of the modern piano. For example, Gyorgy Sandor, when applying technical solutions to the Waldstein Sonata, explicitly stated for forearm rotation to be applied in parts such as bars 14 to 19. He also noted that the rotation technique be applied until the end of bar 22 of the first movement.[20] Contrary to Sandor's suggestion, when incorporating Czerny's techniques on the modern piano, I used the finger technique for the same sections where Sandor suggested to use arm rotation, and I

[20] Gyorgy Sandor, *On Playing Piano: Motion, Sound and Expression* (Schirmer Books, 1981), p. 145.

only used slight arm rotations in sections such as bars 27–30 as shown through the musical examples above, which also seemed possible.

Czerny's perpendicular finger technique was specifically used on the modern piano especially in sections such as bars 14–15 and 18–19 (see 00:25 of Video 6.1 ), where it alternates between two notes played *pp*. When alternating between the notes, the hand position can be placed in a position that supports the curved fingers preparing for perpendicular movements using finger 1 (thumb) and 3 (middle finger) in the easiest and most natural manner. Unlike using arm rotation with a more relaxed and looser arm or with a shaking motion, finger movements allow finer control where I could regulate every small movement of the fingers on the keys. Also, in performing the perpendicular movements, the fingers create a distinct touch as the pressure exerted onto the keys can be precisely controlled; this provides the ability to maintain the same consistency or to include variations in touch in a more regulated manner. In playing the *tremolo* of alternating notes, slight emphasis on the strong beats were performed using finger movements with an inner impulse. When considering them as a whole, the strong beats can be heard, giving a clear pulse to the piece. These semiquavers were played with clarity, with each finger taking on a single note, hammering their way with equal controlled strength, as opposed to arm rotations where the control of force on the keyboard was dependent on the shake and impulse of the arm. However, this did not mean that I was stiffening my arm and restricting movements that are needed, but rather I was focusing more on the fingers for an equal execution on the modern keyboard, where the arm takes up a rather passive role.

The use of perpendicular finger action can still be seen on both hands playing the semiquavers in bars 23–25. The forearms were straight and fairly still, with mainly movements from the fingers. While it might be more difficult to notice when the left hand was playing the arpeggio that involves black and white keys, the perpendicular finger action presented itself most clearly when playing the second inversion of the E minor arpeggio as all fingers were playing on the white keys.

As a result, in bars 14–15, 18–19 (RH), 23–25 (LH) apart from producing strong tones or accents, the perpendicular finger action helps individualise the tone production of each note, retaining its effect even when it was incorporated onto the modern piano with much heavier keys than those of Czerny's. One could argue that this technique was made possible due to the alignment between instrument, composition, and techniques. For instance, the Erard's heavier keys were starting to resemble those of a modern piano, and the piece features repetition of notes or alternating notes that were conducive to the application of this finger technique. This match between these three aspects can be further confirmed through the musical examples where perpendicular finger movements were incorporated.

As the perpendicular finger technique does not clash with concepts of modern technique or my own techniques, when progressing to louder dynamics such as the semiquaver B in bar 28 and 29, the perpendicular finger was combined with the rotation of the arm and the resulting momentum of the hand allowed for louder and more accented downbeats, which can be seen at 00:49 of Video 6.1 

In examining the dynamics applied onto the high B in bar 28, the notes with the loudest peak coincide with the downbeats, and the arpeggio repeats four times before the descending line, accentuating the high B note. On a Viennese fortepiano, we may not need a very strong touch to achieve the dynamics requested, especially with the sharp attack of Viennese fortepiano. However, on Beethoven's Erard, I would imagine the strong perpendicular finger movements were needed for the heavier and deeper keys. On a modern piano, I combined the use of both hand momentum and arm rotations when needed, while keeping to the perpendicular finger movements.



Figure 6.3. Bars 59 to 61 of Beethoven's Piano Sonata No. 21 in C major (Waldstein), First Movement. (Copyright 1976 G. Henle Verlag)

Perpendicular finger technique was also combined with some arm rotations when playing the first and third semiquavers of bar 59 to 60 that created an almost hammering effect that is not possible on a historical piano (see 01:46 of Video 6.1). It helps in creating a more powerful touch as previously noted in Example 4 of 4.2.1 . In bar 59, a *crescendo* was strengthened using finger movements, especially on E and D#. It made it possible to produce a push towards

the *f* that was needed in bar 60. The sonority of the piano, even though using the same finger movements in the beginning of the piece, builds up resonance of sound, especially at the end of bar 59 with a little help from the pedal, as opposed to the dryer touch in the beginning of the piece. Bar 60 moving towards the first beat of bar 61, by contrast, is pushing towards a more explosive perpendicular touch. The D^6 was played with a combination of rotation in the wrist and the strong perpendicular finger, regulating the stronger and weaker beats towards the maximum point — the slightly longer quaver D note of bar 61— before the descending. These rapid touches on semiquaver notes on the right hand brought a sense of exhilaration with clarity in each note, key and touch, to the extent that the build-up of the music and vibrations of the piano can almost be 'felt'.

These strong finger movements developed into arm movements in the left-hand parts of bars 62–65. Through this, the difference of using finger techniques can be observed on the left hand when playing the chords at 01:51–01:57 in Video 6.1 where the left hand used the whole arm for the *fortissimo* chords.

It is possible to observe the use of perpendicular finger technique throughout the piece until the end, especially in playing semiquaver notes for example in bars 278–281. However, instructions such as keeping the arm still to an extreme degree were not followed in this research.



Figure 6.4. Bars 142 to 147 of Beethoven's Piano Sonata No. 21 in C major (Waldstein), First Movement. (Copyright 1976 G. Henle Verlag)

The left-hand pattern of G–C–B–A from bar 142 onwards is one of the more obvious patterns in this piece that is well suited for the perpendicular finger approach. Integrating the technique into this section, in my opinion, was the most appropriate decision for this four-note motif. In fact, I could not imagine any other method of executing this section to achieve the desired effect of the repeated motif. This left-hand section was believed to be important, or at least it was a section that Beethoven was resolute about. Looking back at Beethoven's Eroica's Sketchbook, Cooper wrote:

> It shows that Beethoven wanted to build, on a dominant pedal, a right-hand part that would rise to high f''', hover there briefly and plunge down rapidly, without pause, into the recapitulation. The details of this needed to be worked out very carefully, however; Beethoven had already sketched the end of the retransition several times at earlier stages (on pp. 120, 122, 123, 124 and twice on 127), which shows that he was particularly concerned about it, that he was aware that it was giving difficulty, and that although he had decided on the left hand motif from the outset (p. 120) and the rising and plunging

> shape of the right hand from soon after, he still had no clear vision of the length or rhythmic details of the retransition.[21]

While being unsure about the melody, Beethoven was already committed to the left-hand motif. In analysing the melodic patterns of the composition, Gosman said:

> The pattern reminds listeners of the exposition's principle theme and signals its readiness to return. But the descending fourths not only remind us of what has happened. They also signal, and through their repetition necessitate, the impending return of the opening theme.'[22]

The motivic, repeating G–C–B–A while pending the return of the main theme (refer to Video 6.1 from 04:12 ), requires intensity in the left hand as it brings the idea of the main theme (D-C-B-A-G)[23] through the lower register. The gradual increase of intensity and the use of stronger finger playing onto each key provides for a path and direction towards the right-hand high F (F^6) in bars 154 (see Figure 6.5). As this section was played with perpendicular finger movement, we can observe the calm and still forearm through the video and that each tone was produced mainly through the knuckles of the fingers. While the right hand dances up the keyboard, the left hand maintains the repeated melodic pattern, firmly and steadily supporting the melody with a distinct low note colour.

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[21] Barry Cooper, 'The Evolution of the First Movement of Beethoven's "Waldstein" Sonata', *Music & Letters*, 58.2 (1977), pp. 170–91 (p. 181), doi:10.1093/ml/58.2.170.
[22] Alan Gosman, 'From Melodic Patterns to Themes: The Sketches for the Original Version of Beethoven's "Waldstein" Sonata, Op. 53', in *Genetic Criticism and the Creative Process*, ed. by William Kinderman and Joseph E. Jones (University of Rochester Press, 2009), p. 99.
[23] Ibid., pp. 102-104.

I could not help but wonder if Beethoven's determinacy in the left-hand pattern was related to the technique used and its effect on the low registers of the piano that he was using at the time. When practicing the piece, I could not find another way of executing the four-note motif steadily without a firm perpendicular finger. Without the technique, the four-note pattern would devolve into a messy, uneven, and unbalanced manner. As the music increased in its intensity, I gradually utilised a higher action of the perpendicular finger as the technique gave the fingers a way to grab onto the notes and execute the four-note semiquaver pattern more steadily.



Figure 6.5. Bars 154 to 157 of Beethoven's Piano Sonata No. 21 in C major (Waldstein), First Movement. (Copyright 1976 G. Henle Verlag)

In bar 154 where the F note descends to B and then ascends to back F repeatedly, Beghin discussed two fingering options where the former (5–4–3–2–1) was more graceful and leaned more towards the Viennese style.[24] However, coming from a modern piano background, I unconsciously made the same fingering decision as Beghin's second option. It led me to start with finger 4 (ring finger) on the high F and land with finger 2(index finger) on B, as the three longer fingers were able to perform perpendicular motions better than the thumb and little finger. Another

[24] Beghin, *Beethoven's French Piano*, p. 192.

reason is due to where the main beats and the *sforzando* land. As the perpendicular fingers help create accents, the stronger accents on the highest note (F), and the lighter on the lower note (B) help strengthen the circling trait of the small climax right before moving downwards rapidly. My strongest accent fell on the F where the fourth finger hits the highest note with perpendicular finger action, to provide more space for the perpendicular action to happen, I also raised the finger slightly higher, thus, providing a stronger emphasis on the dynamics of *sf* as well. My forearm did not move much, although small flexes can be observed when the turn of the index finger occurs. See 4:33 of Video 6.1 .

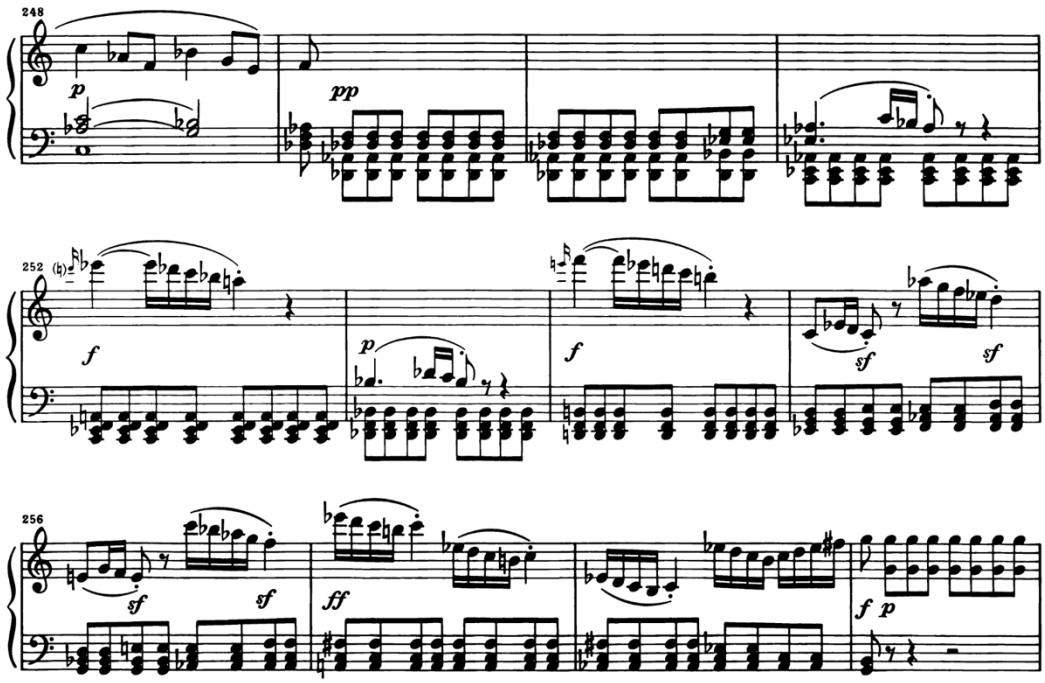


Figure 6.6. Bars 248 to 259 of Beethoven's Piano Sonata No. 21 in C major (Waldstein), First Movement. (Copyright 1976 G. Henle Verlag, München)

From bars 249 to 259, the alternation between extreme dynamics of soft and loud sections was also strengthened using Czerny's finger technique, accentuating

contrasting levels in loudness (See 07:26 of Video 6.1 ). In softer sections such as bars 251 and 253, the right-hand melody was lightly brushed by the fingers, without the perpendicular striking finger position. By contrast, the loud sections, for example bars 252, 254, 255, 256 and 257, along with the *sf* at the end of slurs were played with more perpendicular fingers and was even strengthened with arm movement for further support. This technique that branched from a simple perpendicular finger movement was incorporated into various sections of the piece, including this section where the finger pressures effectively evoke the agitation depicted in the composition. Through these examples, I have integrated and assimilated Czerny's prominently emphasized perpendicular finger movement, establishing a connection to historical performance technique. This integration is mindful of the capabilities of the modern piano, while reinforcing valuable concepts that can be transferred onto the modern piano. The use of perpendicular finger action can be seen throughout the piece, especially in playing semiquaver notes for example in bars 278–281 and bars 295 to the end.

In assimilating Czerny's perpendicular finger technique onto the modern piano, we can easily notice that they are a viable approach with the potential to be developed further on a modern piano. This technique could also be considered the foundation to many modern approaches and thus align well and can be easily combined with modern techniques. The touch produced using the perpendicular movements from Czerny's technique was also not too different from contemporary approaches. It was also observed that the high-finger technique, famous in modern

day China, was influenced by Lebert and Stark's finger school,[25] which shares some similarities with Czerny's finger technique and has been considered under the finger school technique. One of the most famous pedagogues in China, Guangren Zhou, also stated that he was using piano techniques from the period of Czerny's finger school, and that the old finger school method lasted until the twentieth century.[26]

Unlike other historical techniques — for example those by Hummel — which would sometimes appear insufficient on a modern piano, the perpendicular finger technique, while being less powerful without the help of the larger parts of the hand, can result in powerful tones even on a modern piano, and can be more controlled for softer tones as well. Not only that, the interaction between different parts of the hand would also offer multiple degrees of strength or impulse to thrust into the piano keys. While it was noted in the previous chapter that I did not need much help from wrist or arm movements in using Czerny's techniques on the Graf piano (Figure 5.5 and Figure 5.6 in subchapter 5.3), by omitting the rules of keeping arms unmoved on the piano, the performer can adjust the balance between employing the fingers or the arms, wrist, and elbow, maximizing the possibilities and effects of this technique no matter on historical or modern piano.

In terms of the note duration, Czerny stated in his memoir that one of the unforgettable features of Beethoven's playing was the *legato* technique, as the detached *staccato* technique of Mozart's time was still fashionable then.[27] Therefore,

[25] Mo Xu, 'The High Finger Piano Technique in China: Past, Present, and Future' (unpublished DMA, The University of Iowa, 2018), p. 4 <https://iro.uiowa.edu/esploro/outputs/doctoral/The-high-finger-piano-technique-in/9983776629502771/filesAndLinks?index=0> [accessed on 10 January 2024].
[26] Xu, 'The High Finger Piano Technique in China', pp. 50–52.
[27] Carl Czerny and Ernest Sanders, 'Recollections from My Life', *The Musical Quarterly*, 42.3 (1956), pp. 302–17 (p. 305).

unlike Hummel's touch on Mozart's sonata which will be presented following this section, I did not shorten the note duration or play in a detached manner for the first movement of Waldstein, but instead, I focused on the perpendicular finger technique that could be naturally developed in combination with modern techniques.

It could be said that Czerny's techniques were one of the most natural among all the selected techniques to be combined and assimilated on the modern piano, creating clear and powerful tones. Nevertheless, one would also need to rely heavily on the activeness of the fingers more than the other parts of the hand. The assimilation of Czerny's techniques based on his treatise in this piece used finger techniques to control the soft dynamics, while a combination of perpendicular finger action along with the more modern approaches, such as the rotation of the arm, and the use of the wrist and arm, help reinforce and project the sound on the modern piano. The result of this effective fusion is a piece with powerful dynamics that complements Czerny's finger technique, while also demonstrating precision in the use of fingers, resulting in clarity, especially of small value notes.

6.3 Chopin's *Andante Spianato et Grande Polonaise*

Moving into the late-nineteenth century, pianists who were used to light instruments would have had light techniques ingrained into their hands, and using their techniques on the contemporary instruments from the late-nineteenth century may have been insufficient or less compatible. As such, Leschetizky's wrist techniques would be considered a major advancement towards the techniques we are using today. With Romantic era pianos, the longer tone decay also allowed for the kind of wrist movements that were not possible during Hummel or Czerny's time. Although Deppe and Leschetizky's techniques were quite different from those of my own, I have attempted to incorporate these historical techniques into modern piano playing using Chopin's *Andante Spianato et Grande Polonaise Brillante* (see Video 6.2).



Chopin Andante Spianato et Grande Polonaise Brillante, Grand Piano

Video 6.2. Chopin's *Andante Spianato et Grande Polonaise Brillante* played on a modern grand piano in Riverstown Hall, Maynooth University.

Chopin's *Andante Spianato* requires some gentle and soft sections, especially at the beginning. When initially practising this piece on a modern piano in preparation for the Erard and Pleyel, I played it with a *decrescendo* at the beginning which was opposite from the dynamic marked on the score. However, that decision

was not made without reason, I found it difficult to start from *pp* at the very beginning with a *crescendo* without the bass line becoming too loud. It was also a challenge to keep it controlled when the right-hand melody was introduced. Thus, the decision of playing a *decrescendo* instead of a *crescendo*.

Soft dynamics can sometimes be more difficult to control on modern piano, especially when the *una corda* is not used. When experimenting with historical techniques such as Deppe's feather-light arm, I noticed that they offer another way of playing that leads to softer dynamics as they were typically lighter than my own techniques. For example, instead of controlling the whole arm for a quieter voice, I avoid putting in the weight of the arm and attempted to use only the hands or wrists to play the keys. Thus, I incorporated Deppe's feather-light hand technique into the soft sections such as the beginning of the *Andante Spianato* from bars 1 to 12. The technique produced 'floating' tones with a rather soft dynamic and sounded slightly reserved on a grand piano as the keys were not depressed in a heavy manner. It makes soft dynamics easier to control, provides an alternative to the heavier and grounded tone that I usually produce, and alleviates the uneven tones that sometimes occur when attempting to play very softly.



Figure 6.7. Bars 1 to 12 of Chopin's *Andante Spianato*. (Copyright 1998 G. Henle Verlag, München)



Figure 6.8. Preparation of hand position.

With the possibility of playing softer, I made the performance decision to adhere to the notated dynamics of starting with a *crescendo*. Before starting, I

positioned my hand where the upper arm was carrying the elbow, and the elbow the wrist, forming a position where the fingers were relaxed with the wrist arching a little (see Figure 6.8.), in preparation for a quiet beginning as how I experienced it on the fortepiano. I then transitioned the left-hand bass line into a slight *decrescendo* when right-hand melody was introduced. The right-hand melody comes in with a similar hand position, and first notes were played only with the help of the finger and not much of the arm or hand as the wrists were hung slightly higher than usual, holding back the weight of the hand, refraining myself from using arm weight or large forces onto the keyboard. This then resulted in thin and delicate melody lines for the first 12 bars, and the same manner of playing was kept until bar 20 without the *una corda*.

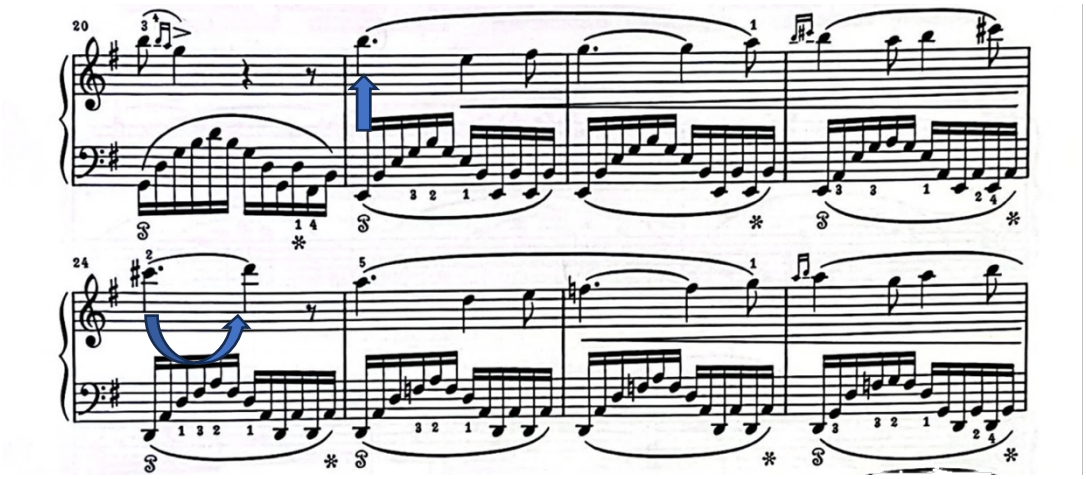


Figure 6.9. Bars 20 to 24 of Chopin's *Andante Spianato* with Leschetizky's wrist movement marked with arrow and my usual circular gesture with circular arrow. (Copyright 1998 G. Henle Verlag, München)

In bar 21 (at 00:56 of Video 6.2), the first note (B^5) on the right hand was played with a thrust from the wrist, inspired by Leschetizky's use of the wrist. This phrase was followed by the use of his hand position where wrists were dropped lower as well. Brée described Leschetizky's technique as below:

> When a strong, full tone is to be brought out *legato* in a *cantilena*, the strength of the fingers does not suffice, but must be reinforced by wrist pressure in the following way.[28]

Leschetizky's wrist technique for the *cantilena* melody was one of the techniques that I could not wrap my head around nor understand in my initial stages of attempting historical techniques. And for that reason, I initially thought that they appeared to be strange, sometimes even absurd, as there was no possible reasoning. It gave me a reason to revert to my usual technique as without any suitable justification, I thought that it may not be a suitable or useful technique. Through the back and forth between the auditory and kinaesthetic experiences on the historical piano, I was able to understand that it was done to accentuate the longer lines and the connection of notes. The interactions and experiences on the historical instrument were then translated onto the modern piano. However, when used on the modern piano, it was not as obvious due to its characteristic of long sustaining tones. Therefore, in incorporating this technique on a modern piano, it could be that the notion of its effect also contributed to playing more *legato*.

Leschetizky's use of the wrist can be combined in my own playing seamlessly and in various sections that involve right-hand melodies. When using this technique on the modern piano, it naturally gives an overlapping effect between notes, bringing, as Brée noted, a '*legatissimo* effect'.[29] The lowered wrist and the use

[28] Malwine Brée, *The Groundwork of the Leschetizky Method*, trans. by TH. Baker (New York: G. Schirmer, Inc, 1902), p. 29.
[29] Brée, *The Groundwork of the Leschetizky Method*, p. 29.

of the wrist that gives weight to the palm and fingers when playing, provided a force that holds down the hands near the keyboard and the fingers near the key. Transferring the weight from one finger to the other made the connection between notes much stronger aurally and kinaesthetically. From my personal experience, Leschetizky's wrist technique also provided guidance on how to use the wrist without much of the arm, which helped develop a more supple wrist that felt freer and more flexible in playing. In contrast, my existing technique, while also involving the wrist, is linked with the arm movement as a whole rather than focusing on just the wrist.

As the phrase has a *crescendo* towards bar 24, more arm was involved in the playing especially towards the end of the phrase where a circular gesture of the arm (marked in Figure 6.9.) can be seen during the second last note of the phrase before resolving. Even though researched historical directions would limit such gestures, large movements of the elbow extending outwards were still used in this case, as louder dynamics were needed.

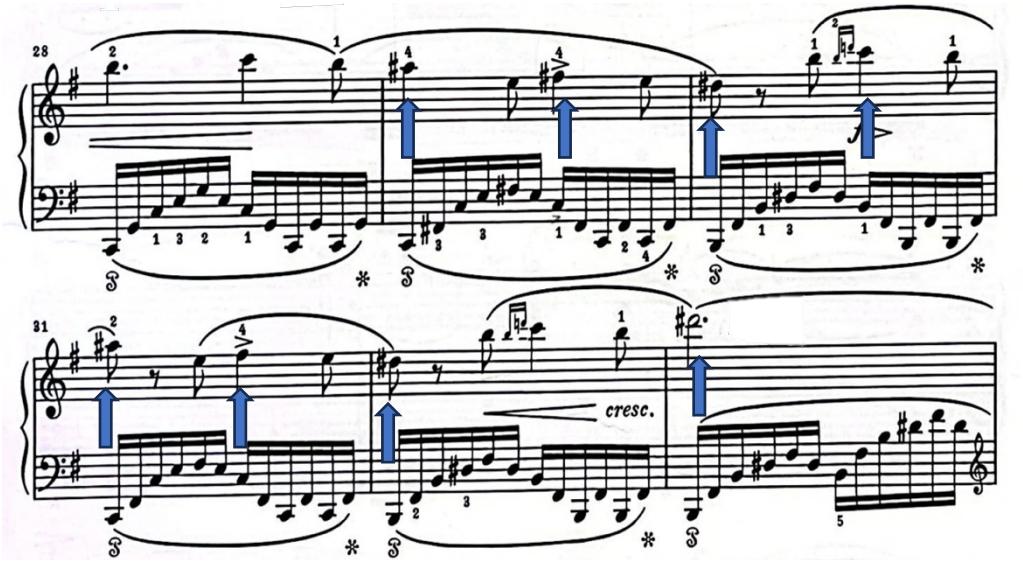


Figure 6.10. Bars 29 to 33 of Chopin's *Andante Spianato* with wrist movements marked with arrows. (Copyright 1998 G. Henle Verlag, München)

The second half of the phrase was played with a lowered wrist and in a more controlled manner, until bars 29 to 32 where more wave like wrist movements were present; some were hand lifts thrusted from the wrist, while others acted as impulses for the right-hand notes (see Figure 6.10 and 01:14 of Video 6.2). As an example, a clear use of the wrist can be seen in the right-hand note in bar 33 where I used the wrist to help with the projection of the sound.

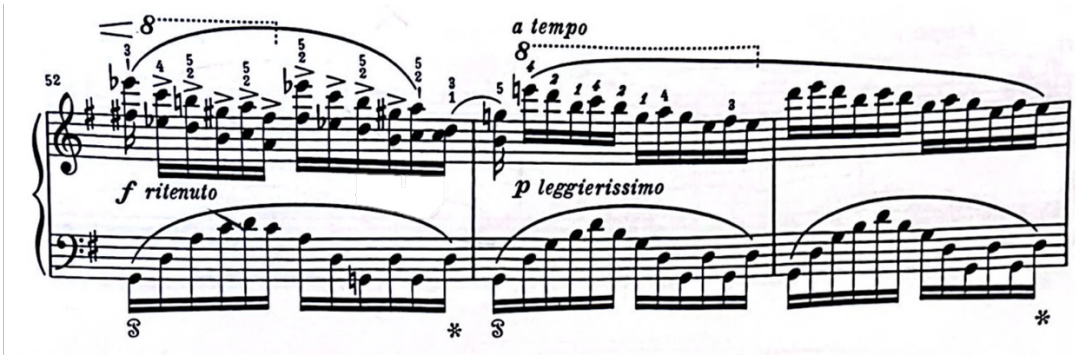


Figure 6.11. Bars 52 to 54 of Chopin's *Andante Spianato*. (Copyright 1998 G. Henle Verlag, München)



Figure 6.12. Body position approaching bar 52.



Figure 6.13. Body position approaching semiquavers in bar 53.

From bar 53 onwards where the right hand takes the running semiquavers, after the first semiquaver E^7 note was gently placed, the hand position shifted slightly to a higher position occupying mainly the light fingers. It can also be observed that a change in my body position occurred when different techniques were used. A slight change in seating position can be seen where the back was straightened upright at

02:22 of Video 6.2 (see Figure 6.12. and Figure 6.13.) when moving from bar 52 to bar 53, a change can also be seen when approaching the ¾ time *semplice* section in bars 66–67 where my body slanted forward slightly, switching back to my usual approach at 02:57–02:58.

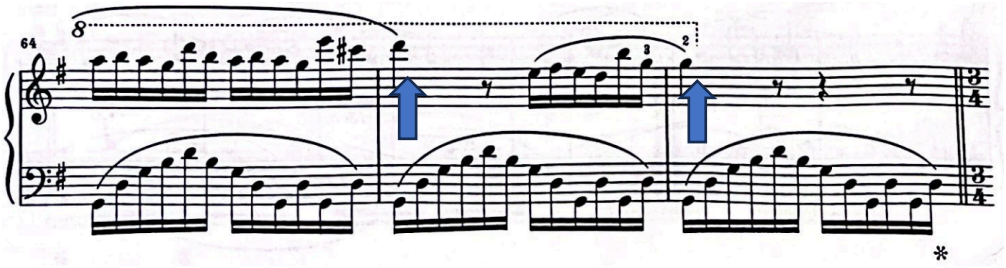


Figure 6.14. Bars 64 to 66 of Chopin's *Andante Spianato* with wrist gestures marked using arrows.

Furthermore, Deppe's technique, where one uses the arm to lift the hand, was also demonstrated multiple times at the end of a phrase. The hand was carried higher towards the end of phrase in bars 64–65, and at the end of the short phrase in bars 65–66 (see 02:49 of Video 6.2). These hand lifts were different from the hand lifts of my usual technique where it involved the whole arm. In this performance, the elbow did not extend outwards, but rather stayed still with only the hand lifting.

In the *Grande Polonaise Brillante*, while historical techniques were attempted in this piece, more parts were played with my usual technique due to the composition that contained more chords and at times required louder dynamics.



Figure 6.15. Bars 17 to 22 of Chopin's *Grande Polonaise Brillante*. (Copyright 1998 G. Henle Verlag, München)

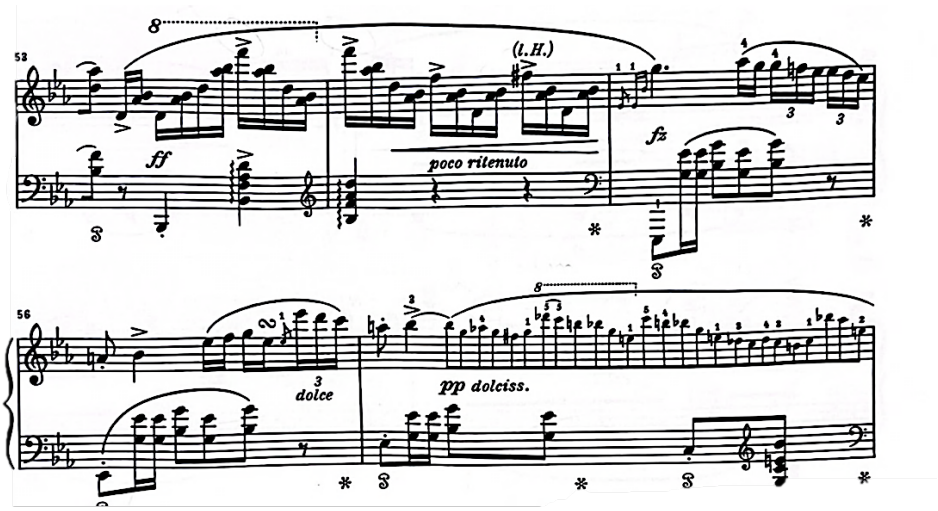


Figure 6.16. Bars 53 to 57 of Chopin's *Grande Polonaise Brillante*. (Copyright 1998 G. Henle Verlag, München)

The beginning solo section for the piano was approached with a light hand where the hands were hung from the wrist, as described in the opening section of the *Andante Spianato*. During the initial touch where the right-hand note was played, I could feel that the fingertip touching the key was then thrust downward by wrist pressure rather than the whole arm. Therefore, the right-hand melody was played

with more wrist than arm (see 05:21 of Video 6.2 ). The recurrence of the same theme repeated in bar 55 (see 06:41 of Video 6.2 ) on the other hand, was played differently with more use of the arm and elbow. The same first note of the melody was played in a manner where the whole arm and even the body was used to play into the piano to achieve the *fz* dynamic marking on the score. The demonstration of the two different ways of playing showcased the definitive difference of 'using the weight of the arm' between the two centuries. The latter had the support of the arm and body, and the resulting movement was accompanied by a circular motion of the arm which is common in modern techniques. Along with the ability of the modern piano to sustain its voice, it gives more strength to the playing, lengthens the downbeat through the amount of time the key is kept depressed, and the movement produced was sustained throughout this period.

On the other hand, with historical techniques, where wrist pressures were mainly used, one would hardly perform the same motion of sustaining and lengthening the note as the small and light movements push and propel the tempo forward in a different manner, creating a slight fluctuation in tempo, showcasing two different aesthetics, interpretations, and outcomes from the same phrase. For example, in this video, the decorated right-hand section of bar 57 was played using my own technique, in which I combine finger action with controlled support from the arm to shape the flowing notes. However, this section could also be played using the 'weightless' approach, or Deppe's technique. This approach that may result in gentler and lighter touch, as well as smaller hand and finger movements without

downward arm movements, could also lead to occasional forward-moving impulses, giving the arabesque a different sense of flow and expressive quality. This lightness of historical techniques is visible on the semiquavers at the beginning of the solo theme in bar 17. Being lighter than modern techniques, these techniques create a sense of reduced contact with the keys in playing. This sensation along with the light action of the keys that are more sensitive to touch, create a way of playing with lesser resistance and pressure against the keys when playing notes with small values. Therefore, this resulted in a mild acceleration, where the notes were propelled forward and rushed slightly towards the end of the short phrase (triplets in bar 17, towards the first note of bar 18).

In general, in using Deppe's light hand technique at bar 17, my hand position also changed to adapt to the 'weightless' approach. The left hand that was responsible for many of the supporting bass notes was also played in this manner. They were not struck in a heavy manner, but rather in a gentler way with resonance supported by the pedal.

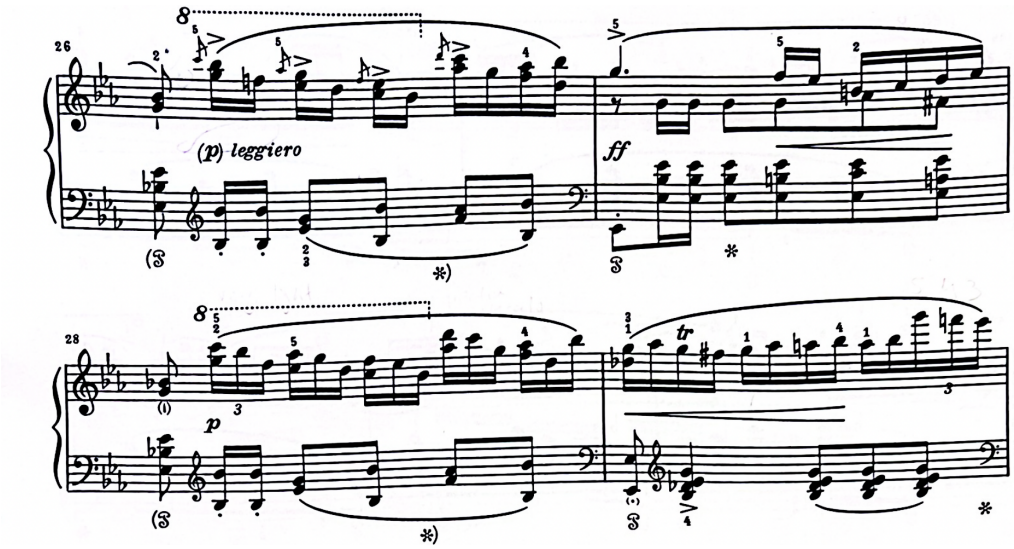


Figure 6.17. Bars 26 to 28 of Chopin's *Grande Polonaise Brillante*. (Copyright 1998 G. Henle Verlag, München)



Figure 6.18. Bars 63 to 67 of Chopin's *Grande Polonaise Brillante*. (Copyright 1998 G. Henle Verlag, München)

Although historical techniques were deliberately incorporated, not all were visually distinct. Sections that require lighter touch or softer dynamics, for example the *piano* phrases in bars 26, 28, 64, and 66 were performed using historical techniques as they produce lighter touches that complement the music. Using a hand that was hung from the wrist prompted a more relaxed touch that was softer and more *leggiero*. As the difference in historical hand position would affect the accuracy of notes in these bars, these sections did not come naturally at first. However, in exploring and attempting the hand position, it opened the doors to a different tone colour that would easily contrast with the *forte* sections before and after these bars (see 05:40 of Video 6.2). To alleviate the issues of inaccuracies in notes, the elbow was extended slightly for a more natural angle in approaching the notes, making them less visually distinct. Eventually, this hand position also helped in playing the semiquaver thirds in bar 66 in a more relaxed manner for the fingers, allowing them to flow better, and even overcome a technical difficulty that was

present before (see 07:09 of Video 6.2 ). One of the technical difficulties I encountered when learning the piece, was the thirds in bar 66, where the problem persisted even after different fingering choices were considered. The thirds tend to feel obstructed when played using my heavier technique, and fingers would at times become uncoordinated. However, by employing a lighter hand, the looser touch offers an alternate playing solution that provided more fluidity.

As Doğantan-Dack put it, 'the experiential continuity and unity between tone colour and gesture extends to the relationship between musical structure and performance expression in general' for the performer,[30] therefore, historical movements are also paired according to slurs and accents of the music. For example, the feather-light movement of the hand was used in the last part of the *Grande Polonaise Brillante*, where it was paired with the end of the slurs in bar 222, giving a feeling of weight being lifted from the piano, or the 'weight-off' technique as Kobb mentioned.[31]

[30] Mine Doğantan-Dack, 'In the Beginning Was Gesture: Piano Touch and the Phenomenology of the Performing Body', in *New Perspectives on Music and Gesture*, ed. by Elaine King and Anthony Gritten (Taylor & Francis Group, 2011), pp. 250–51 <https://ebookcentral.proquest.com/lib/nuim/reader.action?docID=679214&ppg=270>.
[31] Kobb, 'Piano Playing in Beethoven's Vienna', p. 139.



Figure 6.19. Bars 221 to 222 of Chopin's *Grande Polonaise Brillante*, with hand lift marked with arrow. (Copyright 1998 G. Henle Verlag, München)

As the *ff* and accents at the beginning of the phrase may not be delivered using the feather-light arm technique, I combined it with my usual approach used in modern piano playing. To achieve the effect of an accent, I used arm weight, momentum, and outward rotation of the hand — techniques not recorded in the researched nineteenth century treatises. This was then combined with historical techniques when I used a feather-light arm at the last slur at the end of the phrase, presenting a more lifted hand by retaining the weight of the arm. The use of a more lifted approach also resulted in softer tones (see 13:32 of Video 6.2).



Figure 6.20. Bars 226 to 229 of Chopin's *Grande Polonaise Brillante*. (Copyright 1998 G. Henle Verlag, München)

Another section where the same hand position for the feather-light hand was also used is in the *leggiero* running notes in bars 227 and 229. While the video did not show a clear difference in hand movements and position, the concept of 'hanging' the hand by the wrist was kept, and this allowed for more involvement of the fingers to help achieve the *leggiero* effect. However, using only the fingers would be too tiring for louder passages. Therefore, it was only employed for the *leggiero* sections, while my usual techniques were used when *crescendo* or louder dynamics were required.

We can also observe the difference between my existing approach and historical techniques. Although both employ the use of the arm, historical techniques did not utilize the full weight of the arm, shoulder, and back to the same extent as my own techniques. For example, I use the momentum and weight of the arm to play into the keys, while Deppe's technique uses the back and shoulder to carry the arm and hand avoiding dropping the whole arm into the piano, as shown in Chapter 3.4 and Chapter 4.4 on Deppe's techniques. Therefore, there were also sections where I

continued using my existing approach despite incorporating historical techniques as I believe that we should not neglect the nature of the instrument at hand.

The shift between my own and historical techniques was not easy to balance especially in the same piece where I needed to switch from one to the other or at times gradually change towards a lighter or heavier approach. In doing this, there were a number of counterintuitive actions, one instance of which that was felt immensely and shown through my playing was the urge against my usual practice of playing heavily and applying weight onto the piano. Leschetizky's and Deppe's lighter techniques forced me to work against my natural instinct of pushing into the keys with my body, and instead taught me to give the wrist more agency.

The sensation of playing not too heavily or grounded was uneasy for me as someone who was used to putting weight onto the keys and producing solid and firm tones. A part of me was not used to the touch and feel of the keys being played in this manner. For instance, the body was at times seated up straight, and the hand hung from the wrist and shoulder resulted in the tangibility of the keys becoming less significant, and the control — the secure gripping of the keys that I was used to — decreased. In addition to that, the difference in hand position at times due to the change in postures and the use of hand parts would also lead to inaccuracies of notes. Following this, I also needed to get accustomed to the sound that was slightly 'lower' in volume as it tends to be 'thinner' in tone compared to the full projection of the modern piano in regular performances. In short, the difference in sensory information and the auditory outcomes I perceived deviated from my usual playing on the modern piano.

At the same time, these techniques also provide us with alternative approaches where they create varied ways of playing the same phrase, presenting options to different modes of execution, softer dynamic levels and tone colour, and even helped in overcoming technically challenging passages. A few differences observed in my performance after trying to apply concepts of historical techniques were, the use of the 'gentler' approach where I did not play the keys in a hard or harsh way, and the use of wrist movements in playing and projecting sound. While it is impossible for us to completely disregard the techniques that were ingrained into our playing, it would be invaluable for us as modern pianists to also consider what we can learn and apply from historical techniques.

6.4 Mozart's Sonata in D major, K. 576, First Movement

In returning to the modern piano, the first movement of Mozart's Sonata in D major underwent substantial adjustments inspired by historical techniques, performance practice, and experiences on historical piano. While having previously performed this piece, I now approached it through a different lens where its final rendition, although performed on a modern piano, was considered from the perspectives of historical techniques and instruments. These changes, including those of the hand position and techniques, affected several aspects of playing, resulting in a rendition that exhibits interesting nuances in terms of dynamics, phrasing, articulation, and duration of notes compared to my prior attempts of the same piece.

Among the many differences in playing Mozart on a modern piano is its naturally thicker texture than a historical Viennese instrument. Irving mentioned that

the Viennese piano action provides keyboardists with 'astonishingly immediate physical control of dynamic nuance and articulation and is ideally suited to conveying the lightness and clarity of Mozart's piano music', which is at odds with the modern piano that provides 'a far more shrill and metallic sound rich in overtones [...] express(ing) a sound world wholly different from that through which his (Mozart's) musical thought was conveyed'.[32] Additionally, due to the parallel-strung bass strings combined with the double-strung lower registers up to the middle, and triple-strung higher registers, the treble would not be conquered or overpowered by the bass notes on the Walter fortepiano that Mozart was believed to be using.[33]

Therefore, Mozart's sonata, when played on the modern piano, would likely exhibit a denser texture due to the instrument's inherent design. The harmonics generated by the lower strings might enhance or potentially obscure the intricacies in the right-hand passages.[34] It was common practice for modern pianists to attenuate the left-hand passages which were inherently stronger, creating space for the right-hand melody to shine. Consequently, on the modern piano, the left-hand parts were often perceived as accompaniment support for the right-hand melody. Moreover, the deeper keys of a modern piano have sculpted the modern pianist's touch to be heavier and imbued with a stronger attack, particularly as they refine their technique over the years. Irving mentioned that:

> What the Walter fortepiano strikingly offers in Mozart's music is clarity of texture. In particular, each register of the instrument has its own markedly

[32] John Irving, *Understanding Mozart's Piano Sonatas* (Routledge, 2016), p. 105.
[33] Ibid., p. 107.
[34] Irving, *Understanding Mozart's Piano Sonatas*, p. 106.

> distinct tone quality, making the music speak in a much more colourful and characteristic way than on the modern grand. Within such an environment, the textures of Mozart's music gain in clarity compared with what is possible on the modern instrument. Distinctions between strands of counterpoint are enhanced by tonal contrasts produced by the instrument itself, rather than their having to be forced out of a uniform tonal landscape.[35]

Although the modern piano may not present the distinctive timbres and colours in different registers that are usually found on historical instruments, this has also inspired similar ideas to be explored on the modern piano. In playing contrapuntal themes of the first movement, I experimented with distinguishing higher and lower registers through variations of touch.

A modern pianist would quickly notice the differences between instruments through the interaction with the historical fortepiano, and most of these experiences would likely be common for modern pianists where some have been discussed in Chapter 5 . I believe it is possible to bring these new experiences on a historical piano back onto the modern piano through adaptations of some historical techniques and concepts. While the outwardly placed hand position by Hummel that was to facilitate the thumb on the black keys (a newly emerged technique at that time) was not followed, I have listed a few aspects where I made changes in my own playing after attempting Mozart's pieces on Viennese fortepianos, and the link to the full video can be found below.

[35] Irving, *Understanding Mozart's Piano Sonatas*, pp. 106–7.

- Lighter touch; where the motion originates from the joints of the fingers, and avoid hanging the hands downwards.[36]
- Moderating accents or avoid thumping[37] created by hand momentum, or sudden movements.
- Increase clarity, emphasizing speaking quality through articulation and phrasing.



Mozart Sonata in D major, K. 576, First Movement

Video 6.3. Mozart's Sonata in D major, K. 576, First Movement played on a modern grand piano in Riverstown Hall, Maynooth University.

One aspect that was affected the most was the change in phrasing. I recall questioning the purpose of those short phrase marks if we were only ever playing them *legato* on a modern piano. Worse still, a part of my brain extinguished what little curiosity was left by convincing myself that there must be a reason why they were not followed that was beyond my current understanding. Reattempting the same piece now for this research, they made much more sense. While I am not aware of

[36] Johann Nepomuk Hummel, *A Complete Theoretical and Practical Course of Instructions on the Art of Playing the Piano Forte* (T. Boosey, 1828), I, p. 3 <https://urresearch.rochester.edu/institutionalPublicationPublicView.action?institutionalItemId=28625>[accessed 2 March 2021].
[37] Hummel, *A Complete Theoretical and Practical Course of Instructions on the Art of Playing the Piano Forte*, I, p. 4.

the extent of the changes made to my present performance since the first time I played this piece, upon reviewing a video recording I took merely 8 months prior to my recording, it was surprising to note the number of changes that unfolded in my own playing.

When applying the 'speaking style' and clearly articulated qualities that were emphasized frequently by scholars such as Breitman[38] and Gunn,[39] to the articulation of short phrases, it eventually led me to a more unconventional way of shaping them. With the help of historical techniques and the embodiment experience on historical instruments, long phrases with smaller phrase marks were played in smaller phrases that forms a part of a larger unit. Although played with a lighter touch and a more diminished dynamic range, the clarity was increased.

I tried to smoothen the short phrasings, presenting them in a way where they would sound articulated in a natural manner, and also being careful to not be heard as hiccups. In the journey of experimenting and incorporating these aspects onto the modern piano, I initially relied on my own techniques as I believed I had more control and was able to produce the intended result on a modern piano. However, they presented some challenges in following the phrase marks that I wanted to adhere to. Accents were present on random notes, and I quickly realised that the hand was lacking control when trying to execute the short phrases, as these were usually neglected and phrases were combined into a longer phrase rather than articulated accordingly, making it more difficult to perform the short phrases in a light and

[38] Breitman, *Piano-Playing Revisited*, p. 1.
[39] Donna Louise Gunn, *Discoveries from the Fortepiano: A Manual for Beginning and Seasoned Performers* (Oxford University Press, 2016), p. 79.

natural way. At this moment, I recalled a similar problem when I used my own techniques on the fortepiano for the first time as well. This somewhat similar challenge presented itself in the most unexpected place — on the modern piano, but this time it was because I was trying to abide by Mozart's phrase marks. Therefore, I used historical techniques, such as keeping a light hand where I can play with the fingers and finger joints, making it much easier to follow the short phrase marks.

I tried to incorporate the phrase marks without compromising too much on the tempo and rhythm. And before long, I was accustomed to breaking up long phrases and can even apply it to sections where phrase marks were not indicated. Sections where short phrases were performed were showcased in the following musical example.



Figure 6.21. Bars 15 to 22 of Mozart's Sonata in D, K. 576, First Movement.
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In bars 16 to 19, the short phrase marks were articulated using a light hand lift, separating the slurs. The hand lift helps carry the hand, pulling away slightly from the keyboard and carrying it to the next destination — the starting note of the

next phrase, and continues. While the phrase cut-off was quite subtle, it shaped the phrase in a different way where the phrasing was realised in a simple, direct, and straightforward manner, and brings out the sharp attacking touch that was observed on the fortepiano even more. Through a recording from eight months prior (Video 5.5 in subchapter 5.3) and Video 6.3 in this subchapter, it could be discerned that I was attempting the semi-*staccato* touch inspired by the sharp, attacking timbre of the fortepiano (see 00:24 of Video 6.3  , and 00:26 of Video 5.5 ). The two separate recordings were not only phrased differently, the movements of the arm, hand, and elbow in producing the phrase were also quite different. In short, the posture of the hand where elbows remain still, finger joints move freely and lightly, and hand lifts were simple and straight forward without any circular or extraneous movements, made it easier to execute the short phrases especially at such tempo. The same approaches were also applied to subsequent sections with slurs, for example in bars 41 to 45 and bars 121 to 129.

Not only was the light hand used in the right-hand part, but it can also be observed in the left-hand part as well. While it helped the phrasing in the right hand, it also aided the left hand in achieving a variety of note durations. In bars 20 and 21 where the right hand was playing a little louder, the supporting left hand had a note duration that was longer and had louder dynamics. However, in the next repeated phrase in bars 22 and 23, where I intended to play softer, apart from diminishing the left-hand part by playing softer, the natural hand lifts also made it possible for a

slightly shorter note duration, resulting in a subtle different in the left-hand part (see 00:30 of Video 6.3).



Figure 6.22. Bars 20 to 23 of Mozart's Sonata in D, K. 576, First Movement.
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However, it is not surprising that these postures that give rise to hand lifts and light touches also have their limits. It was difficult for me to maintain these postures and techniques for a long period as mentioned earlier, or on technically challenging sections, such as the trill in bar 40 (see Figure 6.23.), as the keys were much heavier than on a fortepiano. In Video 5.5, I attempted the same technique, however, the outcome was rather rough as we can observe how the elbow was extended to assist the trill, and the clarity was poorer (refer to 01:04). Therefore, I used more finger actions, and did not extend the elbow as much in Video 6.3, and it resulted in tones produced with better clarity (refer to 00:59).



Figure 6.23. Trill in Bar 40 of Mozart's Sonata in D, K. 576, First Movement.
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When using Hummel's technique, it posed some limitations in terms of the dynamic levels on the modern piano. When I realised this issue, I recognized the problem it may bring when executing longer phrases as I used to interpret them as one long line, building the intensity of the phrase through dynamics to the climax of the phrase. One section in the piece where I first experienced this was in bars 62 to 67. One of the ways that can easily let me execute the phrase in my usual manner was to use my own techniques, as it was a plausible way of pushing the intensity of the phrase through dynamics. However, instead of building the intensity of the phrase all the way from bar 62 to the peak at bar 67 for six long bars (see Figure 6.24), I refrained from relying on my usual approach even though the modern piano was capable of doing so. I divided the phrase into two shorter sections, playing a slight *crescendo* from the upbeat to bar 63 to bar 64, and grouped the Bb of bar 64 to the Eb tied to bar 67 as separate section, therefore dropping the dynamics again when starting at Eb, and *crescendo* slightly again towards the peak at bar 67 this time (Figure 6.25, also see 01:36 of Video 6.3). Below are the scores with phrase marks to show the change in phrasing.



Figure 6.24. Bars 62 to 70 of Mozart's Sonata in D, K. 576, First Movement, with longer phrase marks and dynamics marking in orange and blue.
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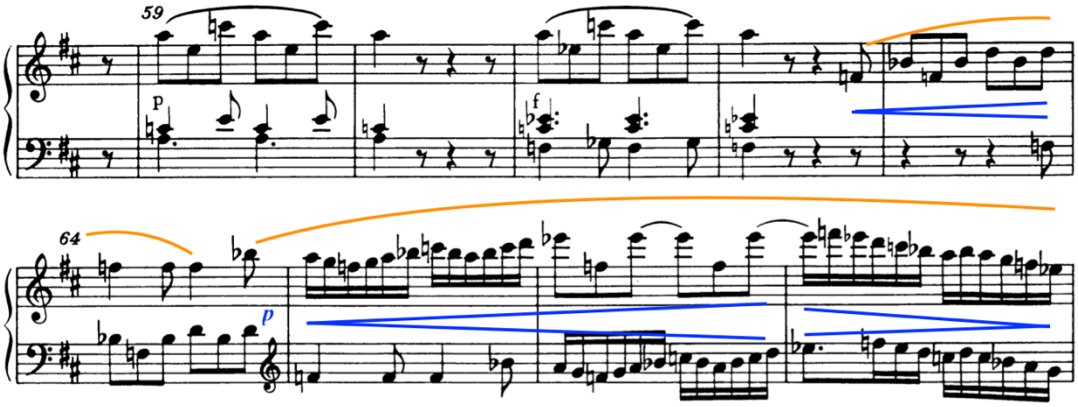


Figure 6.25. Bars 62 to 67 of Mozart's Sonata in D, K. 576, First Movement, with shorter phrase marks and dynamics marking in orange and blue.
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As Irving mentioned, the Walter fortepiano where each register has its own tone quality would provide us with clarity of texture that we can hardly find on a

modern grand.[40] This characteristic of the fortepiano is particularly beneficial in highlighting counterpoint phrases,[41] offering clear distinction in the different voices. He further related this to none other than Sonata in D K. 576, where contrapuntal texture was generously used.

While the modern grand piano may not have as distinctive a tone quality in each octave like the fortepiano, the prior experience of playing on the fortepiano inspired me to perform some sections, such as the canonic section in bars 137 to 143 (see Figure 6.26), differently. Although the historically informed techniques helped produce a dryer tone with sharper attack and encouraged shorter note durations in general, the performative decision of how a phrase is played, was also motivated by the distinctive timbre of different octaves of the fortepiano. This is because, when short phrases were performed instead of long phrases, these shorter musical ideas sometimes were placed on different octaves which gave rise to a variety of tone colours. As the first half of the first phrase starts from $F\#^4$ (last note of bar 137), while the second half starts from $F\#^5$ (first note of bar 139), I was inspired by the distinctive timbres in the different octaves of the fortepiano to separate them and perceive them through different tone colours. Therefore, apart from grouping them into three sections with each section consisting of two bars, I also tried to differentiate the quavers in bars 138, 140 and 142 from the bars that carried semiquavers in bars 139, 141, and 143, as the quavers were lower in pitch and slower in rhythm. In transferring this to the modern piano, I tried to bring out the difference in tone colour by emphasizing the left-hand parts that play the lower octaves in bars 138, 140, and 142, while emphasizing the right hand with high voices in bars 139,

[40] Irving, *Understanding Mozart's Piano Sonatas*, p. 106.
[41] Ibid.

141, and 143, instead of shaping this phrase following the contour of the melody (see 03:32 of Video 6.3).



Figure 6.26. Bars 137 to 143 of Mozart's Sonata in D, K. 576, First Movement. Copyright 1986 by Bärenreiter-Verlag and NMA Online, published by the Mozarteum Foundation Salzburg in collaboration with the Packard Humanities Institute, 2006ff. Musical example/s reproduced with kind permission of the Mozarteum Foundation [accessed on 22 September 2024].



Figure 6.27. Bars 6 to 18 of Mozart's Sonata in D, K. 576, First Movement. Copyright 1986 by Bärenreiter-Verlag and NMA Online, published by the Mozarteum Foundation Salzburg in collaboration with the Packard Humanities Institute, 2006ff. Musical example/s reproduced with kind permission of the Mozarteum Foundation [accessed on 22 September 2024].

The clarity and attack of the notes produced by historical techniques on a fortepiano was also a motivating factor in applying them on the modern piano. I also tried to combine both my own technique with Hummel's light touch from bar 8 to bar 15 (see Figure 6.27) where the theme was placed in the left-hand part, rather than playing it with a weaker tone and viewing it as merely an accompaniment. I perceived this section of music as if I was playing on a fortepiano where the timbres of octaves were clearly differentiated, and I had the luxury of bringing out both lines. With that in mind, I attempted to follow this line of thought on the modern piano. As the left and right-hand parts were about two octaves apart, to further enhance the difference between the two hands, I maintained a stronger and firmer touch on the left hand, bringing out the deeper tones of the lower registers, while playing the right hand with a light touch as Hummel instructed to bring out the delicate tones of the high voices. In playing it this way, the intention was to draw out the left-hand theme alongside the right-hand melody, enhancing the contrapuntal elements of the composition (see 00:13 of Video 6.3 ).

I also infused bars 108 to 117 (see Figure 6.28) with different touches to determine if they could enhance clarity in passages where the texture of the piece becomes increasingly contrapuntal and would easily become disorganized or even chaotic. I attempted to use the sharper tones inspired by historical techniques to bring clarity to the canonic section on the modern piano. I emphasized the first notes of each short phrase and also played the phrases on the higher octave with a sharper attack to help differentiate the higher registers from the lower registers and leverage

the different tones of the registers on the modern piano (see 02:44 of Video 6.3

).



Figure 6.28. Bars 107 to 117 of Mozart's Sonata in D, K. 576, First Movement. Copyright 1986 by Bärenreiter-Verlag and NMA Online, published by the Mozarteum Foundation Salzburg in collaboration with the Packard Humanities Institute, 2006ff. Musical example/s reproduced with kind permission of the Mozarteum Foundation [accessed on 22 September 2024].

This piece was performed with techniques where the fingers were used much more than hand, and the tones were produced with stronger attack that was quicker and sharper. These dryer tones then prompted a quicker tempo, with lesser *rubato* and *ritardando*. In fact, it pushes the tempo forward especially when semiquavers or notes with smaller values were played and helps anticipate the following phrases. After several occasions where the historical technique prompted a quicker tempo throughout this research, it led me to link these occurrences with El Bacha's experience that was noted in Chapter 5.3.3 , where he mentioned that being pushed by the response of the piano, he often played faster on the first Steinway Grand piano

replica (1836). Like the response of historical instruments, the researched historical techniques also affected the tempo in playing. This again highlighted the connection between historical techniques and instruments. In this particular example, not only did the section from bars 107 to 117 bring more clarity, but the piece in general had acquired clearer notes and phrases as well. With the sharper attack of the notes and the direct approach of the techniques without many extraneous movements or the intention to play the notes in a rounded way, the use of the pedal was also kept to a minimum.

On that note, another change I applied in this last stage when returning to the modern piano also prompted me to reconsider my stance on pedalling. The topic of whether Mozart used a pedal has been discussed by several musicologists, especially after the discovery of the adjustments made on his Walter piano by Michael Latchlam.[42] In examining whether pedals should be added, different opinions were formed.

Although it may never be known how Mozart pedalled in his composition when he used an instrument with knee-levers, other instruments that played an important role throughout his life such as the clavichord and harpsichord should be taken into consideration. As these instruments were interchangeable for musicians during Mozart's time, one must imagine how he would play his composition on instruments that do not feature pedals. While Mozart's sonata was very suitable on the fortepiano, there were accounts where Mozart performed his sonata on clavichords. For example, Mozart mentioned in a letter to his father on 13 November

[42] Michael Latcham, 'Mozart and the Pianos of Gabriel Anton Walter', *Early Music*, 25.3 (1997), pp. 383–400.

1777, that he played his Sonatas on a clavichord in Mannheim when invited by Sir Beecke.[43] Additionally, a certificate found in Mozart's clavichord penned by his wife also noted this message below.

> My dear clavier, upon which Mozart played so often and composed *Die Zauberflöte, La clemenza di Tito*, the Requiem and *Eine Freimaurer Cantate* … Mozart so loved this clavier, and for that reason I love it doubly!

Given that Mozart also composed on his clavichord, it is only natural to surmise that he may have composed or played his sonatas on the clavichord as well. Therefore, there is a chance that these sonatas even though played with knee levers on a fortepiano, could also be played without much sustaining effect. Through the study of historical techniques and prior experiences on a fortepiano, the performance decision in terms of pedalling on my final rendition of K. 576 also naturally changed.

In this case, as Hummel's physical playing techniques were studied in this research and applied onto this Mozart sonata, his stance on the damper pedal was also considered. Through his words, it seemed Hummel did not like the extraneous use of pedals and made the following remarks.

> A performance with the dampers almost constantly raised, resorted to by way of a cloak to an impure and indistinct method of playing, has become so much the fashion, that many players would no longer be recognized if they were debarred the use of the pedals.

[43] Wolfgang Mozart and Anna Maria Mozart, '0370. Mozart to His Father, Salzburg; Postscript by His Mother', 13 November 1777 <https://dme.mozarteum.at/DME/briefe/letter.php?mid=934&cat=>.

> Though a truly great artist has no occasion for pedals to work upon his audience by expression and power, yet the use of the damper pedal combined occasionally with the piano pedal has an agreeable effect in many passages, its employment however is rather to be recommended in slow than in quick movements and only where the harmony changes at distant intervals […]
>
> [...] every player should indulge in the use of them (pedals) with the utmost moderation; for it is an erroneous supposition that a passage, correctly and beautifully executed without pedals, and of which every note is clearly understood, will please the hearer less, than a mere confusion of sounds, arising from a series of notes clashing one against another.[44]

He also noted that 'Neither Mozart nor Clementi, required these helps to obtain the highly deserved reputation of the greatest and most expressive performers of their day'.[45]

Hummel, being Mozart's student, had the opportunity to observe and listen to Mozart's performance, and therefore may have developed a similar concept of pedalling. On realising the clarity of sound offered on a fortepiano, I too resonate with Hummel's words on pedalling, and my approach to pedalling gradually and subconsciously changed due to the historical techniques learned. With the adjustments in terms of touch, articulation, and phrase marks, I realised that an

[44] Hummel, *A Complete Theoretical and Practical Course of Instructions on the Art of Playing the Piano Forte,* III, p. 62.
[45] Hummel, *A Complete Theoretical and Practical Course of Instructions on the Art of Playing the Piano Forte,* III, p. 62.

excessive pedal would only serve to undermine the aspects learnt through historical techniques and experiences on the fortepiano — to strengthen the clarity of the touches and of the music, especially on a modern piano.

Scholars have been experimenting and voicing their opinions on the use of pedal in Mozart's music. One example that may relate to my research would be Paul Badura Skoda's example of adding pedal on repeated *portato* notes (one of the categories where he believed pedal may be added).[46] While the example that Badura Skoda used were repeated semiquaver notes with semi *staccato* phrase marks over them, I agree that 'in certain types of passages the piano strings should not be "beaten" by the hammers but put into gentle continuing vibration'.[47] In discussing the same example used by Badura Skoda, Grohman believed that while using the pedal may help with sound quality, it is not a necessity and borrowed Bilson's opinion that the pattern was similar to the early Bb Concerto which was written for the harpsichord. In another example, Grohman also responded to Badura Skoda's question of 'Whose feet would not itch to use the pedal here (broken chords from Mozart's Concerto in D minor, K. 466)?' with 'only the pianist who did not have pedals.' [48]

[46] Paul Badura-Skoda, 'Mozart without the Pedal?', *The Galpin Society Journal*, 55 (2002), pp. 332–50 (p. 346), doi:10.2307/4149048.
[47] Ibid., p. 346.
48 Robert Grohman, '"Not the Slightest Reverberation"—Did Mozart's Fortepiano Lack Knee Levers?', *Journal of Music Research*, 25, 2016, pp. 69–101 (p. 90), doi:10.6244/JOMR.2016.25.03.



Figure 6.29. Bars 1 to 10 of Mozart's Sonata in D, K. 576, First Movement.
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While the repeated *portato* notes are not part of the Mozart Sonata used in this research, I used the pedal in the repeated A^4 notes in bar 2, and the repeated B^4 notes in bar 6 (see Figure 6.29) prior to embarking on this research, attempting to promote a more continued sound and more reverberation, coming from the same perspective as Badura-Skoda. However, this changed after the application of historical techniques. These repeated notes without the use of pedal on the fortepiano further articulate the main theme with more clarity. A change in pedalling can also be observed in the following examples.



Figure 6.30. Bars 31 to 43 of Mozart's Sonata in D, K. 576, First Movement. Copyright 1986 by Bärenreiter-Verlag and NMA Online, published by the Mozarteum Foundation Salzburg in collaboration with the Packard Humanities Institute, 2006ff. Musical example/s reproduced with kind permission of the Mozarteum Foundation [accessed on 22 September 2024].

In bars 34 to 40, while initially performed with the pedal to achieve a more connected left-hand melody beneath the semiquavers, the pedal blurs the semiquavers on the right hand. Without the use of knee levers on the fortepiano, this blurriness was not noticed, but rather the articulation was enhanced. I was able to do the same on modern piano and embrace the crotchet left-hand notes, especially those in bar 34 and 36 (See 00:50 of Video 6.3) without prolonging them. It was a straightforward approach that gives both hands clearer voices. Without the pedal, the left hand was more clearly articulated, while the busy right hand showed precision. However, not using the *una corda* on the repeated motive in bars 36 and 37 compromised the change in dynamics.



Figure 6.31. Bars 79 to 100 of Mozart's Sonata in D, K. 576, First Movement. Copyright 1986 by Bärenreiter-Verlag and NMA Online, published by the Mozarteum Foundation Salzburg in collaboration with the Packard Humanities Institute, 2006ff. Musical example/s reproduced with kind permission of the Mozarteum Foundation [accessed on 22 September 2024].

I also moderated my previously generous use of the pedal for this distinct section from bars 81 to 96, where the previously pedal was used to encourage long phrases. However, in the effort of adhering to the slurs marked in the score, the use of pedal to join these short phrases would in turn contradict each other. Therefore, in the final rendition, pedal was not used from bars 81 to 92 to allow for the execution of the slurs. This section may be perceived to be less *legato* and more detached, unlike my previous performance on the modern piano. However, it accentuates the smaller units within a larger phrase, and showed increased emphasis on the first note of each phrase. For example, with a slight break between the slurs in bars 83 to 85, the first note of each bar was highlighted, and showed a gradual increase in dynamics

after each slur, contributing to the overall direction of the larger phrase. From bar 93 onwards where slurs were not used, the pedal was slowly incorporated again, building up to the *forte* part in bar 97 before the accumulated tension was released in bars 97 and 98, returning to the main theme of the movement. (Compare 03:43 of Video 5.5 and 02:03 of Video 6.3)



Figure 6.32. Bars 150 to 152 of Mozart's Sonata in D, K. 576, First Movement. Copyright 1986 by Bärenreiter-Verlag and NMA Online, published by the Mozarteum Foundation Salzburg in collaboration with the Packard Humanities Institute, 2006ff. Musical example/s reproduced with kind permission of the Mozarteum Foundation [accessed on 22 September 2024].

Conversely, an example where the pedal was still used was the chord in bar 152. (see 05:33 of Video 5.5 and 03:51 of Video 6.3) My previous way of playing using the damper pedal to build this phrase from bar 150 towards the chord in bar 152 changed slightly. Following Hummel's instruction to use the damper pedal moderately, I kept the ascending passage without pedal, building the phrase using finger techniques on the right hand and the chordal left-hand part, while adding a touch of pedal only when playing the chord in bar 152 without much delay or *rubato*. This changed the interpretation from using pedal to

influence the overall effect of the ascending passage, to intensifying the peak chord, while keeping the ascending passage clear.

It is largely agreed that pedalling in the late-eighteenth century was different compared to our current contemporary practice. Grohman wrote,

> To musicians of the Classical era, the knee lever, hand lever, or damper pedal provided primarily not a means of aiding in the practicality of executing certain passages, but rather created a more general effect. In fact, the manner in which these features were often employed more closely resembled the use of ornamentation or timbral changes rather than a functional aid in producing a *legato* connection.[49]

However, one shortcoming of this rendition with the use of historical techniques was underutilisation of the full range of dynamics of the modern piano. As loud dynamics were not performed with full force, and the *una corda* was not used as much, the dynamic range was narrower compared to my previous recordings. While it can be perceived as a drawback, it again aligns with the nature of the historical techniques and instruments where the dynamic range was smaller than a modern piano.

In summary, Mozart's first movement of the Sonata in D demonstrated in this subchapter brings a very different perception even in comparison to my own performance of the same piece. It was performed with movements and actions that

[49] Grohman, '"Not the Slightest Reverberation"', p. 95.

involve historical techniques, especially that of Hummel's where the fingers were employed from the finger joints, and the elbows were kept fairly passive, without much use of arm weight. These actions gave a more direct means of playing and provided a different perspective from the tone and techniques of modern piano playing.

In other words, these historical techniques and my experience of them on historical instruments have prompted me to play the same piece on the modern instrument — one that possesses different nature and characteristics in — in an alternate way. It led to a kinaesthetic sensation that instead of digging into the keys and drawing out the full sound, encouraged more surface touches with quicker momentum and attack on the keys. Furthermore, different ways of performing such as the shaping of phrases can also be observed instead of relying solely on dynamic variation. Through this study, not only was the piece performed within the context of historical techniques and instruments, but it was also realised in a more modern context on a modern grand piano.

6.5 Discussion

As historical techniques researched in this thesis emerged in the nineteenth century, an important aspect to keep in mind when incorporating these techniques onto a modern grand piano — an instrument about 200 years away from the emergence of these techniques — is to be aware of the nature of the instrument and how to fully utilise it even when historical techniques are in play. It is crucial not to neglect the nature of the instrument when focusing on the historical techniques. As we know, these techniques were proposed, suggested, and taught on historical instruments that were different from the modern piano in many aspects such as the lighter touch and shorter tone decay. Therefore, we must also consider the nature of the modern piano, what it is able to offer, its ability and capability when incorporating historical techniques. This necessitates a new kind of balance between instruments and the techniques used in merging them together, which brings us to the matters in the following sections.

6.5.1 The 'Otherness' of Different Keyboard Instruments

Sensory feedback such as kinaesthetic sensation forms a large part of a pianists' performing experience. In an experiment by Askenfelt and Galembo that was mentioned earlier, musicians failed to identify the piano in a listening-only test but were able to identify the instruments without difficulty in a free playing task even when being blindfolded and having the noise masked, blocking visual and auditory feedback, showing a stronger reliance on haptic responses than sound.[50] In using different pianos or keyboard instruments, the process of adapting to and embodying

[50] Charalampos Saitis, Hanna Järveläinen, and Claudia Fritz, 'The Role of Haptic Cues in Musical Instrument Quality Perception', in *Musical Haptics*, ed. by Stefano Papetti and Charalampos Saitis, (Springer, 2018), pp. 73–93 (p. 84), doi:10.1007/978-3-319-58316-7_5.

each instrument can vary from one to another. Doğantan-Dack used Giltburg's words when describing the process of embodying a new piano as 'a gradual acclimatisation' where 'the aural and tactile equivalent of eyes adjusting with time to darkness'.[51] She also mentioned that:

> One reason why novices and less advanced pianists find the process of adjusting to a new piano onerous is that as they become highly familiar with the instrument they regularly practice on, the kinaesthetic-tactile sensation of key depth and weight recedes to the background of their conscious awareness, or even vanishes completely.[52]

As attempting different instruments would help pianists adapt to the individual differences, it would certainly be favourable to be able to practice on a vast selection of instruments. However, they may not always be easily accessible. Even in the setting of an academic institution, there is a limit to the number of instruments available, and we would eventually familiarize and acclimatize to the instruments available over time especially when they are used frequently. Not to mention that we are often faced with completely unfamiliar piano at concert halls, and would still need to go through the process of adjusting to it as Giltburg described, 'hours passed […] the piano feels less strange, uncharted territory',[53] and thus Doğantan-Dack's words that 'cultivating this element of embodied variability is

[51] Boris Giltburg, 'The Pitfalls and Perks of Playing a Concert Hall Piano', *The Guardian*, 21 February 2015 <https://www.theguardian.com/music/2015/feb/21/the-pitfalls-of-playing-a-concert-hall-piano> [accessed 9 November 2023].
[52] Mine Doğantan-Dack, 'The Piano as Artistic Collaborator', in *Rethinking the Musical Instrument* (Cambridge Scholars Publishing, 2022), pp. 1–19 (p. 10) <https://www.researchgate.net/publication/358369084_The_Piano_as_Artistic_Collaborator> [accessed 10 November 2023].
[53] Giltburg, 'The Pitfalls and Perks of Playing a Concert Hall Piano'.

part of the process of developing pianistic expertise'.[54] While acclimatizing within the range of modern pianos is an ability learned over multiple contacts and every performing opportunity with different instruments, historical keyboard instruments are commonly placed in parallel to modern instruments, and rarely converges in the world of modern pianists. Therefore, in the case of alternating between modern and historical keyboard instruments, the transition does not just 'present a certain embodied and psychological inconvenience',[55] but it occurs to such degree that if the approach was not considered, the artistic value of the performance experience may diminish. In this research where both historical and modern instruments are involved, and the transition between them occurred several times, it urges myself as the performer-researcher to cultivate the suggestion made by Doğantan-Dack — for a pianist to 'retain in her awareness some of the "otherness" of the instrument she plays on […]'.[56]

While it may be difficult to imagine how we can retain awareness of the 'otherness' of the instrument, it comes quite easily when a modern pianist plays on a historical instrument due to their stark differences. As Doğantan-Dack stated, when using an unfamiliar piano, a pianist's 'knowledge of the relationship between her bodily experiences and the sounds she produces is always dynamic, emergent and highly contingent'.[57] Through this, we can utilise prior experiences gained from embodying a different piano and keep ourselves informed by interpolating the experiences of 'otherness' onto the instrument upon which we need to perform. With the developed awareness called for by Doğantan-Dack, we can transcend the

[54] Doğantan-Dack, 'The Piano as Artistic Collaborator', p. 10.
[55] Doğantan-Dack, 'The Piano as Artistic Collaborator', p. 10.
[56] Doğantan-Dack, 'The Piano as Artistic Collaborator', p. 10.
[57] Doğantan-Dack, 'The Piano as Artistic Collaborator', p. 10.

boundaries, going beyond just the transition between different modern pianos to also include the transition between historical and modern pianos. As long as we keep the practice of retaining the 'otherness' when playing or embodying a keyboard instrument, this knowledge would be valuable when transitioning between instruments, including the transition from modern to historical instruments and vice versa.

In this case, through the back and forth on modern and historical pianos in this research, the use of historical techniques enfolds the pianist while unfolding themselves in the process of embodiment. The historical techniques also played an important role as they were used in grasping and translating the 'otherness' of historical instruments onto the modern piano as demonstrated in this chapter, showing how a modern pianist can be informed and continue to be inspired by historical techniques even when playing on a modern piano. Furthermore, these experiences and techniques learnt are not limited to one particular kind of piano, but can be helpful to the process of embodiment on an unfamiliar instrument, no matter historical or modern.

6.5.2 Interweaving the Past in the Present

In the twenty-first century, musicians and researcher-performers tried to look to the past as a means to move forward, similar to how Paulo de Assis described the notion of problematisation. He stated:

> In the first sense, it looks backwards towards the past […] In the second sense, however, it opens up new modes of problematising things, modes that,

> rather than aiming to retrieve what things *are* or *were*, search for new ways of productively exposing them within a contemporary situation.[58]

He also proposed to 'reverse the perspective from looking into the past to creatively designing the future of past musical works'.[59] This PhD project that applies researched historical techniques on classical repertoires using both historical and modern instruments showcases the same concept. By introducing, embodying, and using historical techniques as a guide, I was able to apply the concepts inherited from the researched pedagogues. It also offers modern pianists a way to bridge the gap between the parallel worlds of the modern mainstream and the historically informed piano performance, opening the doors to more possibilities. These historical techniques being realised through historical materialities, now present themselves with value and usage. It presents an approach with context from a new perspective, that can contribute to the efforts of modern pianists who wish to attempt performances on historical instruments, as well as on the modern piano itself. It also informs us of how these techniques were employed through practical examples, providing options that can be used in modern piano performance. As C. P. E. Bach stated:

> Every keyboardist should own a good harpsichord and a good clavichord to enable him to play all things interchangeably. A good clavichordist makes an accomplished harpsichordist, but not the reverse. […] The clavichordist grows too much accustomed to caressing the keys; consequently, his wonted

[58] Paulo De Assis, *Logic of Experimentation: Rethinking Music Performance Through Artistic Research* (Leuven University Press, 2018), p. 132, doi:10.11116/9789461662507.
[59] De Assis, *Logic of Experimentation*, p. 132.

> touch being insufficient to operate the jacks, he fails to bring out details on the harpsichord. In fact, finger strength may be lost eventually, by playing only the clavichord. On the other hand, those who concentrate on the harpsichord grow accustomed to playing in only one colour, and the varied touch which the competent clavichordist brings to the harpsichord remains hidden from them. This may sound strange, since one would think that all performers can express only one kind of tone on each harpsichord. To test its truth ask two people, one a good clavichordist, the other a harpsichordist, to play on the latter's instrument the same piece containing varied embellishments, and then decide whether both have produced the same effect.[60]

Bach was convinced that one needs to be able to play all keyboard instruments interchangeably to acquire the different techniques needed, similar to Doğantan-Dack's concept of cultivating the embodied variability for pianistic expertise that was mentioned in chapter 6.5.1 . The role of historical techniques and what they were able to achieve on historical and modern instruments brought forward the same concept that Bach stated about 200 years ago. As modern keyboard instruments are much more common than their historical counterparts, many pianists are more used to the touch of a modern piano. However, by studying, learning, and embodying historical techniques, it creates a link between the two instruments. Historical techniques not only guide us on playing a historical keyboard instrument. They offer us a different approach from those we are accustomed to, that can help us in familiarising ourselves with the instruments in a much shorter time. Moreover,

[60] Bach, *Essay on the True Art of Playing Keyboard Instruments*, pp. 36–37.

they also demonstrate the latent capabilities of the instrument, including its range of dynamics, touch, and articulation, allowing us to bring out a variety of tones and timbres. The knowledge of the pedagogues' approaches provided us a re-imagined way of connecting with the instruments as they did in the nineteenth century.

In historically informed performances (HIP), researcher-performers try to the best of their abilities to include as much relevant information, intentions, and materialities as possible, including instruments, scores, or even building a replica of an instrument.[61] These historical techniques passed down through treatises and books provide an additional aspect for pianists and keyboardists to consider in historically informed performances, similar to how historical actions such as postures and gestures were researched by Andrew Lawrence-King and embodied in early opera and historical theatre.[62] In the more mainstream classical performances with a modern piano, historical techniques inform us of the relevant aspects such as playing styles and instruments, and provide us with a plurality of approaches.

There has always been an unspoken clear line between the modern piano and the historical piano, and between the modern pianist and the HIP keyboardist. One who is immersed in the art of modern piano playing may hardly realise the parallel world of HIP, while historical keyboardists sometimes make the choice to focus and specialize only on historical instruments and in HIP. The re-imagining of historical techniques has the potential to break the perception of needing to make a choice between the two — not just an 'either/or' between historical and modern instruments,

[61] Tom Beghin, 'Building a Replica', in *Beethoven's French Piano: A Tale of Ambition and Frustration* (University of Chicago Press, 2022), pp. 279–84.
[62] 'Il Corago', *The-Harp-Consort* <https://www.theharpconsort.com/il-corago> [accessed 2 October 2023].

but rather, as Bach mentioned, 'to play all things interchangeably'.[63] It is hoped that the line between the modern piano and the historical piano, as well as the execution of both can eventually be blurred with the help of historical techniques, among other solutions.

6.5.3 A 'Different' Performance

The appropriated historical approaches help free us, modern pianists, from the box in which we have confined ourselves. By researching and embodying the researched techniques, it allows the exploration of different dynamics, touches, approaches, and sounds. This exploration will contribute to a more purposeful engagement with piano playing that may lead to new experiences for both the performer and the audience. For example, it opens the possibility to include concepts and playing techniques of historical instruments on a modern piano, creating new meanings and interpretation in a performance.

Leech-Wilkinson who supports the notion of freeing unnecessary rules and constraints from the training and practice of classical music said: 'Music, if we must have a definition, is the experience of a performance.'[64] With that, I believe the experience, especially of a performer, is 'fuller' with the presence of contexts after having undergone this research. It provides an experience of a performance on the modern instruments along with the context and understanding of historical approaches on historical instruments. This makes it a different experience from a purely historically-informed performance on historical instruments, yet it is also

[63] Bach, *Essay on the True Art of Playing Keyboard Instruments*, pp. 36–37.
[64] Daniel Leech-Wilkinson, *Challenging Performance: Classical Music Performance Norms and How to Escape Them*, version 2.17 (2020), Chapter 6.18 <https://challengingperformance.com/the-book/> [accessed 10 November 2023].

distinct from the usual experience of a mainstream modern performance. Instead, it is a combination of both — a performance of classical repertoires using the re-imagined historical techniques, combined with modern instruments from our time.

Although a change in performance can be achieved by using a different instrument such as a fortepiano, which would lead to a performance that feels and sounds different from a typical Steinway performance,[65] when reconsidering the use of historical techniques, their inclusion with contexts on a modern instrument can provide a new approach to also achieve variety in the mainstream piano performance. Just as Leech-Wilkinson mentioned, one of the ways to get scores to work differently and variously is to explore the techniques with one's body, [66] and in the case of this research, historical techniques. To borrow his words,

> … it may be productive to do just the opposite of what one is supposed to do technically or with one's body. For some musicians 'correct' technique or correct posture are not those in which they feel most relaxed and able to focus on being musical with a score. Training may prevent one from ever discovering that; which is why a deliberate attempt to work differently, exploring other ways of making sound with one's body and one's instrument, can sometimes be revelatory, the more so because they 'shouldn't' be.[67]

[65] Leech-Wilkinson, *Challenging Performance,* Chapter 1.
[66] Leech-Wilkinson, *Challenging Performance,* Chapter 20.2.
[67] Leech-Wilkinson, *Challenging Performance,* Chapter 20.2.

The embodiment of historical techniques turns revelatory upon discovering the context, significance, rationale, and nuances of each technique. Techniques, approaches, and movements to produce these sounds are now more than just a means to an end. In fact, they are carried out with intent and can be explained and rationalized with tangible sense and meanings, although bounded to some underlying historical aspects such as the nineteenth-century materialities. These decisions were carefully considered, balancing the practicality and efficiency of the techniques in each of the pieces, with some appropriated with adjustments. While they would affect the tempo, touch, and consequently dynamics on the modern piano, they may not be as distinct as a fortepiano performance. On the other hand, some historical approaches and techniques are so dissimilar to modern approaches that they may also not be endorsed or fully acknowledged by some professional modern pianists.

Nevertheless, this research puts forward an exploration of these techniques provided by our historical counterparts, not only on historical instruments but also in extension to the modern piano. Therefore, the performances accompanying this research consist of a re-imagined approach with deference to historical techniques through historical treatises, as well as the creative perspective of a twenty-first-century modern pianist. While in no way claiming to be historically authentic, being informed by historical techniques, reconsidering the approaches within the historical context, and taking inspirations from historical techniques, have resulted in performance decisions that were entirely unknown and unthought of to me before the research.

Chapter 7 Conclusion

The underutilization of nineteenth-century techniques was the key factor that inspired this PhD research. While it is obvious that we could not return in time to recapture these invaluable techniques in their most original form, this research approached these techniques from a twenty-first-century perspective. It involved the contemporary embodiment of historical techniques as presented in nineteenth-century books, to fulfil the aim of re-imagining nineteenth-century techniques on both historical and modern pianos through research and practice.

This aim was realized through several different objectives, beginning with identifying the appropriate physical approaches for the reimagination of nineteenth-century techniques, followed by embodying the selected techniques to observe the resulting effects on body movements, understanding the roles and functions of nineteenth-century techniques through historical instruments, and ultimately applying and integrating historical techniques on the modern piano. Through implementing these objectives, valuable information and knowledge emerged, addressing the initial research questions, such as ‘How are nineteenth-century techniques different from present day techniques?’, ‘Do they result in a different outcome in terms of body movements?’, and ‘What roles do nineteenth-century techniques play and how relevant are they to modern piano playing?’.

As a start, the importance of identifying and selecting appropriate physical approaches laid the foundation to this research. While many technique books, treatises, instructions, and even incomplete manuscripts were discovered and retrieved, not all were equally suitable for this research that was predominantly

grounded on the departing point of techniques — physical instructions, such as postures and movements of the hand and body. While some overlapping instructions were identified and thus the more comprehensive method books were selected to avoid unnecessary repetitions, this research also excluded harmful techniques that may result in hand injuries. Most importantly, a careful examination was also performed to ensure a strong and direct connection between the repertoire used and the researched historical techniques. Musicological research also ensured that relevant aspects such as historical background, technique lineage, musical influences, and the desired tones or touch of the composer were taken into consideration. Just as Hummel's playing style and his experience as a student of Mozart inspired the pairing of his techniques on Mozart's sonata, Czerny's techniques were matched with Beethoven's sonata, and the instructions of Deppe and Leschetizky on Chopin's music, ensuring a tight and cohesive connection between both elements.

Through the embodiment of the selected historical techniques on the modern piano, the resulting body movements were examined through the first- and third-person perspectives documented using self-reflection logs and motion capture respectively. The inward feeling, kinaesthetic sensation, along with the state of mind of the performer were paired with motion paths and analysis of body parts such as elbows, wrists, and hands, creating a comprehensive visual overview of the expected motion from these techniques and how they influence the performer's playing experience. Furthermore, a comparison of techniques showing different movements and placement of the hands due to different physical approaches between my own and historical techniques were shown through the more tangible format of motion paths.

While parts of this research focused on the resulting movements of the techniques, it was never the intention to naively isolate the physical movements from the broad aspect of techniques that unquestionably involve other pertinent elements, nor attempt to define physical approaches and movements as the sole aspect of techniques. Rather, this is to contribute to the physical element of historical techniques. Through this research, we can surmise that the smaller movements taught in nineteenth-century books were not without reason. Multiple examples and experiences during the study demonstrated rather consistent outcomes — that applying historical techniques led to smaller resulting movements when compared against my own technique. These findings were linked to the performance aesthetics of the time where large and daring movements were not well received. They can also be explained through the historical instruments used that were more delicate compared to the modern piano. These suggested that the researched techniques are entangled in aspects such as the performance aesthetic, historical instruments, as well as other factors such as compositions, or playing styles. Another reason why movements were considered is because, physical instructions that usually translate into movements were the foundational basis of this research, and the starting point of learning these techniques. Therefore, this research also focused on the physical aspects of historical techniques, alongside other elements such as sound and kinaesthetic perceptions.

To return to the roots of the selected historical techniques, a further step was also taken to embody these techniques on historical instruments. Due to the limitation in accessing historical instruments, the embodiment process was limited to

three separate visits to appropriate instruments that suited the researched techniques. This experiment documented my experience of the 'transfer' of historical techniques from my initial attempt at using them on a modern piano to applying them on their instruments of origin. The different responses from embodying these techniques on historical instruments were discussed in an attempt to reveal their roles and effects. The technique-instrument relationship was highlighted using images and video clips with renditions of my own techniques, as well as historical techniques on historical and modern pianos. This exploratory artistic practice of embodying historical techniques presented new perspectives and insights that provided lightbulb moments to the performer, and contributed towards scholarly discussion on the musical effects of using historical techniques.

After a series of research, embodiment, and explorations of these historical techniques, it would have been a waste to end the study without revisiting these techniques on the modern piano, especially since the preceding stages of the research furnished me, the performer, with invaluable insights. Therefore, the final step of this project brings historical techniques back onto its modern counterpart once again. It was done in a way where techniques were not replicated but assimilated by taking into consideration the important underlying concepts of these techniques. The approaches used in playing the same pieces from the beginning of the research became more informed in terms of playing techniques and their contexts. They were also performed again with a more vibrant palette of techniques, giving the pieces more deliberate and meaningful intentions through each movement or action of playing. It was concluded that Czerny's techniques allowed for amplification that weaves easily into modern techniques, while Hummel, Deppe, and Leschetizky's

techniques provided differing approaches, resulting in previously unexplored outcomes in dynamics, phrasing, touches, and even clarity. These final recordings infused with historical techniques brought out tinges of touches and shades drawn from historical techniques and historical instruments, although performed on a modern piano, providing a fresh perspective on the three pieces.

While this research offers valuable insights regarding nineteenth-century techniques and their connection to instruments and compositions, there were also some challenges and limitations. One aspect which could be further developed in this research where historical instruments were used, would be a more in-depth examination of their technical features. It cannot be denied that my background as a classically trained modern pianist with only limited time on historical instruments would mean that I did not have the same level of experience and practical expertise compared to professional historical keyboardists. However, it is precisely due to my limited experiences on historical instruments that this research allows for the meaningful discoveries from the very first attempts of applying the researched techniques on historical instruments, including both the difficulties of and learnings from this process, to be examined. This research would resonate with and help modern pianists who are interested in delving into this area of study, as well as those struggling to balance between the two kinds of instruments without being overwhelmed or intimidated. Using my past experiences on the piano, I offer insights of these attempts from the perspective of a modern pianist to assist others in forming a stronger connection between these instruments.

It is also important to highlight that this research discusses a comparison between my own techniques that are long established, and the researched techniques that were only newly learned. The historical techniques were learned to the best of my ability in the available time, and the comparison between the two sets of techniques was intended as a way to highlight the differences between them. It is expected that my techniques would feel more natural, familiar, and more intuitive, while the application of historical techniques, by contrast, required cogitation before practical application, heightened attention, conscious effort, and concentration in performing them, which can sometimes result in reduced precision and comfort. Although there were differences in proficiency, it allows us to capture the raw moments of myself as a modern pianist transitioning from the modern piano to its historical counterpart. The unfiltered moments from the artistic practice of this research document not only my transition in terms of techniques, but also other aspects such as physical interactions with the instruments, body movements, and even mindset. The challenges, struggles, discoveries, and learnings through each experience that were accumulated and eventually led to more understanding and proficiency of these techniques, were also conveyed through this thesis. Furthermore, the fresh approaches gained have also influenced my musical decisions in the later stages of the research. Having understood the relevant knowledge on historical techniques and having performed them on a modern instrument, this thesis and my final recordings also function as a window for modern performers and audiences into the historical world.

Yonit Kosovske mentioned that although we need to devote much time, energy, and focus to master the playing technique on another instrument, our

musicianship and imagination would benefit from studying another instrument, especially as a performer and pedagogue.[68] Therefore, the embodiment process and the exploration of these new techniques opened new ways of playing and helped me to be more intentional and perceptive of the sound produced. Thus, it does not signify that we must apply these researched techniques in order for the music performed to be authentic, but rather to explore the possibilities that lie within them and be informed by new discoveries of knowledge and sound. While this research managed to extract the experience and information from the application of historical techniques, this difference in proficiency should be taken into account in future research that aims to study a specific technique for a more balanced comparison.

Another important element of this research is the subjectivity of the performer's perspectives in the embodiment process. While focusing mainly on a performer's input increased the subjectivity of the research, it revealed information and knowledge that otherwise would not have been attainable. Therefore, this research with the help of self-reflection logs and motion capture acting as a third perspective, embraced the issue of subjectivity.

Other challenges of this research also include ambiguity in textual interpretation due to different cultural backgrounds and societal norms from two centuries ago. Also, due to the lack of media sources, the research relied heavily on textual sources, which could be interpreted differently depending on the researcher. Therefore, this loss of direct transmission targets 're-imagination', in place of 'reconstruction' or 're-creation' of these historical techniques. While these

[68] Yonit Lea Kosovske, *Historical Harpsichord Technique: Developing La Douceur Du Toucher*, ed. by Paul Elliot (Indiana University Press, 2011), p. 69.

researched techniques were pieced together using individual instructions, postures, and movements, it was also clearly understood that a technique cannot simply be derived from a piece of paper, and a set of techniques may not be fully described without the support of pertinent sources. Thus, the incorporation of other aspects such as historical instruments, relevant and available treatises, scholarly discussions, and comments on techniques, were also used to construct a more complete picture of these researched techniques. Finally, while this research focused only on four pedagogues, the initial preliminary screening of technique books also did not include treatises or books that were only published in foreign languages, or primary sources that can no longer be traced.

From a theoretical point of view, this research prompts further academic discussion regarding nineteenth-century techniques through bridging research and practice. The knowledge gained from musicological research into historical treatises and method books, was used in the practical applications of the techniques, and ultimately reinfused musicological discourses with the insights from merging the two aspects. It is an example where practice and research go hand in hand, supporting each other through interactions and dialogues, and leading to a thesis that demonstrates practical relevance, as well as recordings that provides detailed explanation and context. On a practical level, this project revived selected historical techniques from the nineteenth century through the process of embodiment and practical application, which envisaged a potential solution with the ability to support the interplay between modern and historical instruments. It offers modern pianists guidance towards approaching historical instruments using techniques that complement and correspond to them. By immersing myself in this research, I

gradually found my place within historical techniques on both modern and historical pianos. Documenting, observing, and disseminating this research through my artistic practice also fosters a sense of inclusion by encouraging modern pianists to explore the historical aspects that may not often be included in modern piano teaching and playing.

This research also reconnects historical contexts to piano performances, nourishing and inspiring pianists using other aspects of music, breaking the cycle of going through the same repetitive loop in performing music by merely using musical scores. Instead, it introduces historical techniques, playing approaches, instruments, and the connections between them, showcasing how we can reinterpret the music at hand using this knowledge in a performance. In terms of historically informed piano performances, these techniques became an aspect that HIP performers can consider and integrate into their performances. For modern mainstream pianists, these contextually and historically informed techniques broaden the variety of touch, techniques, or approaches that present a different means to performing nineteenth-century repertoires that could lead to fresh perspectives. These techniques also lead us to different performance decisions and playing outcomes, encouraging diverse interpretations and renditions of classical performances.

The findings of this thesis could inspire further research into the following areas. To build on the findings, the resulting movements of nineteenth-century historical techniques achieved through motion capture can be used as a stepping-stone to further examine the visual aspect of these techniques, studying how these movements affect other aspects of a performance such as the performer's intention,

the audience's perspectives, and even its audio-visual relationship. Further research can also be done by relating these researched techniques to other historical sources such as early recordings to study the connection between techniques and performances. In terms of historical instruments, the techniques demonstrated in this thesis can be useful for further research that involves pedagogical approaches for historical piano. Furthermore, this thesis also confirmed the use of more conservative approaches since before the nineteenth century that enables one to link these to the broader contexts such as the cultural aspects of nineteenth-century society.

This PhD research has contributed to the knowledge of nineteenth-century techniques where, when viewed as a whole, we can notice the eventual development of techniques through the four pedagogues, for example, from finger techniques in the early-nineteenth century to the employment of wrists at the end of nineteenth century, and from the use of horizontal movements to the beginning of arc movements. While this theoretical knowledge may not be new to musicians, this change in technique was shown through practical application on both the modern and historical pianos. It was also enriched by the performer's perspective and feelings, as well as the practicality of these techniques. Thus, this thesis is also a means to translate my learnings, discoveries, thoughts, and opinions, to other pianists who are interested in these subjects.

As I complete this PhD thesis, I realised that this research not only brought forward some improvements to myself as a pianist, increasing my awareness of my own body movements, techniques, and listening skills as I play the piano. It also multiplied the options and approaches available to myself in piano playing. In

response, the short musical examples and final rendition of the pieces, reveals one of many interpretations that was performed with context and intention, presenting a re-imagined version of these pieces. By bringing new meanings to the same pieces using different playing approaches, I hope this research project brings a unique experience to readers and listeners, just as how Czerny felt when he first listened to Hummel's playing — a revelation.

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