

**BRIDGING DUALITIES:
THE PIANO PEDAGOGY OF MARIE JAËLL (1846-1925)**

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DEDICATION

To my husband Adam Letourneau for his encouragement and support in so many ways while I took “my turn.” His belief in my potential means so much to me. To my parents for their many years of quiet sacrifice to make my musical education possible and for letting me know that I was always good enough for them. To my teachers for seeing my possibilities even when I didn’t see them and for sharing a higher vision of music. To my students who have always inspired me in the Way of the Pedagogue.

ABSTRACT

Marie Jaëll (1846-1925), pianist, composer, and pedagogue, was a brilliant figure at the close of the nineteenth century, although she fell into relative obscurity in the twentieth. She is best known for her piano pedagogy, in which she set out to transform the study of piano using rational principles and empirical analysis. She stands at a major turning point between the pedagogy of the nineteenth century and modern pianism. In this thesis, I discuss Jaëll's innovative divergence from tradition, placing her method and theories in the context of the development of piano pedagogy. In her search to understand and explain the underlying principles of piano playing, she brought scientific reasoning and experimentation into the realm of art. In her attempts to reconcile personal experience and observation with scientific theories, she stepped outside of traditional models of learning and teaching piano.

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METHODOLOGY

In this thesis, I draw on writing by and about Marie Jaëll, including primary and secondary sources. Since no English translations of Jaëll's major pedagogical texts exist, this thesis unavoidably relies heavily on secondary sources that describe her ideas and philosophy. I draw extensively from Laure Struber's PhD. thesis "The Education of Musical Thinking Through the Hand According to Marie Jaëll (1846-1925)."¹ Struber summarizes the writings of Marie Jaëll and details the main concepts in her pedagogy in English. Where I cite Struber and others, I use their translations. When original sources are cited, the translations are my own. In discussing Jaëll's theories in English, subtleties of language may present difficulties because of the translation from French to English and also because of Jaëll's time and intellectual space. Struber directly translates the exercises referred to by Jaëll as "double emissions." This type of exercise is usually called in English "repeated notes." Some words have specialized meaning in music and musicology like "*mécanisme*," which can mean either the mechanism--"action" --of the piano, or it may refer to the ways in which the parts of the hand work together to accomplish a technical goal. Other words have a certain meaning in Jaëll's time, but a different association in our own. For example, the word "*physiologie*" in *fin de siècle* France integrated aspects of the mental as well as physical body and was evolving in meaning.² Some of Jaëll's terms and ideas

¹ Laure Struber, "The Education of Musical Thinking Through the Hand According to Marie Jaëll (1846-1925)" (D.M.A. PhD Dissertation, University of Washington, 2017), <http://hdl.handle.net/1773/40944>.

² "Physiology," in *Webster's Dictionary 1828 online* (2020.2.24, August 4, 2021). Webstersdictionary1828.com/Dictionary/physiology. Webster's Dictionary of 1828 gives one definition of "physiology" as "The science of the mind, of its various phenomena, affections and powers." Another

are unique to her and her colleague, Charles Féré, like “*ovoid corpuscule*,” a term they coined to describe their theory that in more sensitive areas of the finger papillae, a microscopic neural fiber, or *ovoid corpuscule*, winds around the papilla and forms a connecting fiber to the brain. I have relied upon Struber’s explanations and translations, online tools, and my own understanding in interpreting her theories. Because Jaëll’s ideas are a product of her intellectual milieu, in the specialized fields of music and experimental psychology, and in her own language, some misunderstanding or ambiguity may be inevitable. In this thesis, I survey the history of piano pedagogy between approximately 1800 and 1925 in order to situate Jaëll and her innovative approach. I also examine the changes that occurred in the mainstream of piano instruction during the latter half of the nineteenth and turn of the twentieth century and compare Jaëll’s ideas with those of her contemporaries. I use musical examples and extracts from Jaëll’s writings to illustrate her method.

definition as “the science of the properties and functions of animals and plants, comprehending what is common to all animals and plants, and what is peculiar to individuals and species.”

CHAPTER 1: INTRODUCTION

Mme Jaëll deserves a special place in the world of pianists of both sexes...She needs bold novelties, dangerous works, successes that one wins with a hard fight. It doesn't matter to her what one thinks of the work she plays and the patronage that she gives it, if she has judged in her artistic conscience that it is a work worthy of being presented to the public...Her fault - who does not have hers? - is to have too much imagination, to see beyond the possible and the real, beyond the instrument she plays and the work she performs; she has this in common with all the great poets and great artists, whom she does not know how to keep the right measure...It is quite simple that for such a richly endowed nature the piano is not enough...Add to this that Mme. Jaëll makes a game of writing in verse and prose, and that she draws with talent; but she seems to attach no importance to these trifles. Music is her life and her soul.³

--Camille Saint-Saëns, *Écrits sur la musique et les musiciens*

Marie Jaëll (1846-1925) was a brilliant and enigmatic figure who holds a “special place in the world of pianists” and also a special place in the world of pedagogues. A unique personality and polymath, she was a pianist, performer, composer, writer, scientist, philosopher, teacher, artist and letter writer--and a woman! She is best known for her contributions as a pedagogue, through which she “laid the foundations of modern piano technique.”⁴

³ Camille Saint-Saëns, *Écrits sur la musique et les musiciens. 1870-1921*, ed. Marie-Gabrielle Soret (Paris: Vrin, 2013), 146-47. Quoted in Marc Wetzels, lecture notes to the book, Marie Jaëll and Catherine Pozzi, *Je suis un mauvais garçon : journal d'une exploratrice des rythmes et des sons ; suivi de correspondances avec Catherine Pozzi*, ed. Lisa Erbès and Catherine Guichard (Paris: Arfuyen, 2019).

⁴ Yves Bessières and Patricia Niedzwiecki, "Women and music. Women of Europe Supplement No. 22, October 1985. X/336/85/EN," (1985): 46. The authors describe her as “the first teacher to turn away from the automated methods of the time and towards a conscious study of the movements and the development of touch. Her teaching was imbued with a psychological analysis of the mechanism of touch and the importance of the body to tone and sound. She laid the foundations of modern piano technique.”

Jaëll stands at a major turning point between the pedagogy of the early nineteenth century and the modern pianism that developed after 1900. While she was influenced by some of the most prominent teachers and pianists of her time, including Ignaz Moscheles, Henri Herz and Franz Liszt, her own pedagogical ideas were forward-thinking and radical. She rejected mechanistic training methods and approached the development of artistry and virtuosity as attainable skills that could be observed, learned and taught. In her search to understand and explain the underlying principles of piano playing, she brought scientific reasoning and experimentation into the realm of art.

Born Marie Trautmann, Jaëll rose from humble roots to fame and high society through her successful musical careers as pianist and composer. She grew up in rural Steinseltz, in the Alsace region of France, the daughter of a progressive farmer who later became the village's mayor.⁵ After her father brought home a piano in a horse-drawn wagon, the six-year-old Jaëll progressed quickly due to her diligence and focus. She did not attend formal school but was taught at home, leaving her free to dedicate her time to piano practice and performance. Her

⁵Hélène Kiener, *Marie Jaëll 1846-1925: Problèmes d'esthétique et de pédagogie musicales. Préface d'André Siegfried* (Flammarion, 1952), 19. Hélène Kiener described Jaëll's early life in a biography she wrote about her teacher. Hélène was the daughter of Jaëll's first cousin on her maternal side, Madeleine Kiener, née Rempp, which makes her Jaëll's first cousin once removed. Kiener donated Jaëll's effects to the National and University Library of Strasbourg in 1976, which later became the Bibliothèque Nationale et Universitaire de Strasbourg. In 1996, a second donation was made by the Association Marie Jaëll (Paris). In 2005, Martine Reinbold and in 2008 Marie-Charlette Benoîte added a few items to the collection. The complete list of 735 items in the fonds "Mrs.Jaëll." can be seen at <http://www.calames.abes.fr/pub/#details?id=FileId-454>.

mother supported her young daughter's endeavors by travelling with her to lessons, first in a neighbouring village, then to Stuttgart, Leipzig, and Paris.⁶

Jaëll's early musical training included solo and chamber works by Mozart and Beethoven, as well as paraphrases of operatic themes. She gave her first concert at age nine and played for Queen Victoria a year later, in the spring of 1857.⁷ After four years of private study with Henri Herz in Paris, she enrolled, at age sixteen, for a mere four months at the Paris Conservatoire.⁸ Upon her graduation later that year, she was awarded first prize in the women's class. Jaëll toured Europe and gave recitals throughout her adolescence.

Marie's marriage to the famous concert pianist Alfred Jaëll (1834-1866) shortly before her twentieth birthday launched her into an even greater musical and social sphere.⁹ Marie and Alfred toured and performed throughout Europe, forming connections with other prominent

⁶ Few details remain from Jaëll's early training. She walked to a nearby village for initial lessons but soon travelled to Stuttgart, studying with Franz Hamma. Ignaz Moscheles is briefly mentioned as a teacher. Kiener, *Marie Jaëll*, 23.

⁷ Catherine Guichard, *Marie Jaëll the Magic Touch, Piano Music by Mind Training*, trans. Cyrille de Souza (New York: Algora Pub., 2004), 18. It was also during this time that Ignaz Moscheles was quoted as saying, "This child will do something great in the domain of art." See also Kiener, *Marie Jaëll*, 24.

⁸ Struber, "Education of Musical Thinking," 22. Henri Herz (1803-88) Influential teacher of piano at the Paris Conservatoire for over 30 years. He was also an inventor and piano maker in Paris along with Erard and Pleyel. He gave Jaëll a grand piano as a gift upon her graduation from the Paris Conservatoire.

⁹ Harold C. Schonberg, *The Great Pianists from Mozart to the Present* (New York Simon and Schuster, 1963), 188. Alfred had been a student of Carl Czerny, Ignaz Moscheles, and Frederic Chopin and was known for his elegant playing style, which von Bülow called a "sweet and penetrating tone" and extraordinary execution of trills. Alfred had toured America for four years with P.T. Barnum in the 1840's. He was 15 years older than Marie and, despite their mutual affection, the marriage produced no children. In journals and letters, Marie recorded her conflicting feelings about her work, her art, and her roles as a woman and as a wife. Struber, "Education of Musical Thinking," 28.

musicians and composers including Franz Liszt, Johannes Brahms, Camille Saint-Saëns, César Franck, and Gabriel Fauré. Liszt reportedly said of her, “She has the brain of a philosopher and the fingers of an artist,”¹⁰ while Saint-Saëns declared, “Only one person in the world knows how to play Liszt, it is Marie Jaëll.”¹¹

In her mid-twenties, Jaëll launched her second career as a composer, exhibiting her characteristic traits of persistence, hard work, and determination. She studied composition briefly with César Franck and then principally with Camille Saint-Saëns for the next twenty years. Her ambition is especially noteworthy considering the rarity of female composers in her time.¹² Unlike other female composers of the nineteenth century such as Fanny Mendelssohn Hensel and Clara Wieck Schumann before her, and Cecile Chaminade and Nadia Boulanger after her, Marie did not have the privilege of wealth, social status, or a musical background. She did, however, have the support of her parents and husband.¹³ Her success as a composer is reflected in her over eighty published works, including two piano concertos, a cello concerto, vocal and orchestral

¹⁰ Struber, "Education of Musical Thinking," 3.

¹¹ Guichard, *Marie Jaëll the Magic Touch, Piano Music by Mind Training*, 7.

¹² Bessieres and Niedzwiecki, "Women and music. Women of Europe Supplement No. 22, October 1985. X/336/85/EN," 15. The French word “compositrice,” meaning “woman composer,” was coined in 1847, and admission to formal composition classes at the Paris Conservatoire was only granted to women in 1850.

¹³ Florence Launay, "Marie Jaëll and the other women French composers from the end of the 19th century," *Marie Jaëll Musique symphonique, musique pour piano*. (Palazetto BruZane 2016), <http://www.bruzanemediabase.com/eng/Persons/JAELLMarie.101-02>, CD book excerpt. “Being of provincial and rural origin, she was fortunate to have parents who took little account of the social conventions held by Parisian bourgeois circles... In addition, Jaëll would have been able to study composition within the institution – the note ‘for men’ attached to the appropriate classes having disappeared from the regulations from 1850 onwards.”

works, and many piano pieces. In 1878 she became the first woman invited to join the Société Nationale de Musique, in Paris, with support from Gabriel Fauré and Camille Saint-Saëns, thus entering the eclectic ranks of “virtuoso pianist-composer.”¹⁴ Her compositional output and the development of her style integrates Italian, German and French influences within the specific musical culture of late nineteenth-century Paris.¹⁵ Her piano compositions reveal a wide range of styles across both abstract and program music, effectively bridging the musical worlds of late-Romanticism and early-Impressionism.¹⁶

With the loss of her mother in 1878 and the death of her husband Alfred in 1882, Marie suffered profound grief, as described in her diaries and letters.¹⁷ Franz Liszt encouraged her to continue her work and offered his help and support, including an invitation to come to Weimar.

¹⁴ Katharine Ellis, "Female Pianists and Their Male Critics in Nineteenth-Century Paris," *Journal of the American Musicological Society* 50, no. 2/3 (1997): 381, <https://doi.org/10.1525/jams.1997.50.2-3.03a00040>. Ellis describes how a French critic, Oscar Comettant, in 1861 rated pianists in order of “professional competence” in an extensive article on the state of music in France for *L'Art musical*. He placed at the top the virtuoso who composes; second, the virtuoso who doesn't compose; third, the fingerless virtuoso or classical pianist who plays early music that lacks emotional depth and difficulty; and finally, the accompanist.

¹⁵ Sébastien Troester, "A passion for composing," *Marie Jaëll. Musique symphonique, musique pour piano* (Palazetto BruZane, 2016), <http://www.bruzanemediabase.com/eng/Persons/JAELLMarie>. 86, CD book excerpt. Troester quotes from an 1879 review in *Le Ménestral* about a performance of her opera *Ossiane*: “If Mme Jaëll wanted to prove that she is no stranger to the infinite possibilities of the art of orchestration, she has fully succeeded. Her combinations of timbres sometimes produce effects that are as felicitous as they are unexpected and her tutti are energetically handled. She obviously belongs to the Wagnerian school in her manner of working; like the master of that school, she does not give enough prominence to the melody, which she sacrifices to interminable modulations”

¹⁶ Alban Ramaut, "Marie Jaëll," *Marie Jaëll. Musique symphonique, musique pour piano* (Palazetto BruZane, 2016), <http://www.bruzanemediabase.com/eng/Persons/JAELLMarie>. 70, CD Book excerpt.

¹⁷ Kiener, *Marie Jaëll*, 49., quoted in Struber, "Education of Musical Thinking," 36.

Beginning in 1883 she made several extended trips where she observed Liszt's teaching and acted as his secretary, teaching assistant, and friend.¹⁸ Her observations of Liszt's mental practice, his inner hearing as he composed, and his physical playing inspired her in the development of her own ideas.

The early 1890's was a period of intense creativity and work as Jaëll tried to balance her roles as pianist and composer with a new one that was beginning to emerge—that of pedagogue. During the three-year period between 1890 and 1893, she embarked on a performance programme of epic proportions, performing the complete piano works of Frederic Chopin, Franz Liszt and Robert Schumann.¹⁹ She is recognized for being the first pianist to perform all thirty-two of Beethoven's sonatas in Paris, which she did in April 1890 and again in January 1893 in six concerts.²⁰ During this intense time, Jaëll also composed a major cycle of pieces for piano

¹⁸ Thérèse Klipffel, "Biographie", in Laurent Hurpeau, ed., *Marie Jaëll: un cerveau de philosophe et des doigts d'artiste* (Symetrie), 22. quoted in Michael Weinstein-Reiman, "Printing Piano Pedagogy: Experimental Psychology and Marie Jaëll's Theory of Touch," *Nineteenth-Century Music Review* (2020): 3, <https://doi.org/10.1017/S1479409819000715>.

¹⁹ There is some inconsistency in the reports about her performances. The New Grove Online gives composers, dates, and places: "Her repertory included the principal works of Schumann (six concerts, Salle Erard in 1890) and Liszt (six concerts, Salle Pleyel in 1891), and she was the first French pianist to play the 32 sonatas of Beethoven (Salle Pleyel in 1893)." Horst Leuchtman and Charles Timbrell, "Jaëll [née Trautmann], Marie," in *Grove Music Online*, ed. Deane Root (2001). oxfordmusiconline.com. Michael Weinstein-Reiman gives the source to support his claim that she performed the Beethoven Sonatas in 1890 as well as Chopin's oeuvre: *Le Menestrel, April 13. P. 119*. This reference in *Le Menestrel* from 1890 announces a series of 12 Monday concerts in which M. Jaëll was to perform first the 32 Beethoven sonatas in six recitals, followed by the Oeuvre of Chopin in six recitals. Weinstein-Reiman, "Printing Piano Pedagogy."

²⁰ Leuchtman and Timbrell, "Jaëll [née Trautmann], Marie." The first to play all 32 sonatas in a single cycle of performances was Sir Charles Hallé in London in 1861. "The Revolutionary Piano Sonatas," (Website), Carnegie Hall, 2021, accessed Aug 4, 2021, <https://www.carnegiehall.org/Explore/Articles/2020/03/20/The-Revolutionary-Piano-Sonatas>. This feat

based on Dante's *Divine Comedy*, a favourite literary work of Liszt. In a letter to Saint-Saëns written in August of 1893, Jaëll revealed her feelings of uncertainty about her composing and her lack of confidence in Saint-Saën's support. Her experimental and avant-garde work *Pièces pour piano* was misunderstood and, as she feared, was not well received by her former teacher nor by the public.²¹

Her hunger to understand the world around her and within her drove her to pursue academic interests. She read scientific and philosophical works in medicine, physiology, and philosophy and enrolled in a mathematics class at the Sorbonne. Her extensive reading list included scientists and philosophers such as Claude Bernard, Charles Darwin, Herbert Spencer, Alfred Binet, Hermann von Helmholtz, Wilhelm Wundt,²² Arthur Schopenhauer, Plato, Aristotle, and Montesquieu. She took an interest in piano design and experimented with the touch required on different pianos--Pleyel and Erard in Paris, and Bechstein in Vienna.²³

No longer finding joy in performing or composing, Jaëll turned her focus toward the development of a comprehensive approach to piano playing that combined scientific analysis,

was improved upon by Hans von Bülow in his American concert tours in the late 1880's when he performed them from memory. They were first recorded by Artur Schnabel in 1927.

²¹ Troester, "A passion for composing," 77.

²² Struber, "Education of Musical Thinking," 42-43. Struber lists Jaëll's reading as she describes the shift in thought among late romantics, toward reason and research and how this both influenced Jaëll, and satisfied her innate curiosity.

²³ Ingelaere "Marie Jaëll through the eyes of her correspondents," 99. "It [the Bechstein] cannot provide what it does not possess. Therefore, I must completely modify my style of striking the keyboard and my playing; this does not come from the fingers, but from the head. As a result, I am spending long hours [...] playing Bechsteins in my head..." (Marie to Sandherr, November 11, 1885)."

musical artistry, and technique. Beginning with the publication of her method book, *Le toucher*, in 1894, Marie Jaëll set out to completely transform the study of piano. In her eleven pedagogical works, published between 1894 and 1912, she attempted to integrate scientific reasoning with her observations of Franz Liszt's playing and her own personal experience. She held onto some concepts and precedents from her own pianistic tradition while introducing innovative ideas drawn from science and philosophy during an important period of change in the field of piano pedagogy.

In this thesis, I explore Jaëll's ideas and her piano method in the context of the history of piano pedagogy in an attempt to understand the sources of her inspiration. While Jaëll used established modes of transmitting pianistic knowledge, including published manuals and masterworks of piano repertoire, she rejected many of the ideological underpinnings of nineteenth-century pedagogy. I demonstrate that the theories of French and German scientists, most importantly, Charles Féré, exerted a strong influence on her thinking, writing, and pedagogical activities in later life. In her attempts to reconcile personal experience and observation with scientific theories popular in her lifetime, she stepped outside of traditional ways of learning and teaching piano.

Marie Jaëll sought to bring historically incompatible ways of knowing together in an integrative and practical approach to the study of piano. The search for technical and aesthetic truth about the pianist's art has been approached in often dualistic terms throughout the history of the piano such as mechanistic/holistic, instinctive/analytical, and technical/aesthetic. Lia Laor sees a divide between mechanistic and holistic approaches to piano pedagogy in the nineteenth

century.²⁴ Those who adopted the mechanistic approach focussed on mastering individual technical skills linearly, adding the musical elements after. In contrast, holistically-minded teachers considered technical and aesthetic elements as intertwined. In his exhaustive historical resource, *Famous Pianists and their Technique*, Reginald Gerig describes another seeming dualism in historical approaches to pianistic truth: empirical, discovered through “practical, intuitive experience,” and analytical, relying upon the “reasoning mind in reference to the objective phenomena of technique.”²⁵ Those who have discovered the path to technical freedom naturally and subjectively, whom he calls the empiricists, have often feared those who seek, question, probe, and analyze the objective elements of technique—the analysts. Gerig suggests that both approaches are complimentary and important. Marie Jaëll’s holistic vision of the study of piano emphasized the importance of both subjective personal inquiry and reasoned analysis. She emphasized that technical and aesthetic elements were as inseparably connected as the hand, the mind, and the soul. Although in many ways her method fell short of her desired outcome, her holistic and integrative vision is still important today.

²⁴ Lia Laor, ““In Music Nothing Is Worse Than Playing Wrong Notes”: Nineteenth-Century Mechanistic Paradigm of Piano Pedagogy,” *Journal of Historical Research in Music Education* 38, no. 1 (2016), <https://doi.org/10.1177/1536600616662540>.

²⁵ Arnold Schultz, *The Riddle of the Pianist's Finger and Its Relationship to a Touch-Scheme* (New York: Carl Fischer, Inc, 1936), vi., Quoted in Reginald Gerig, *Famous Pianists & Their Technique*, New ed. (Bloomington: Indiana University Press, 2007), 5-6.

CHAPTER 2: THE DEVELOPMENT OF PIANO PEDAGOGY IN THE 19TH CENTURY

The great pianists, with their almost supernatural musical and physical endowments, often discovered [the natural laws of piano technique] by instinct. But, throughout the course of piano technical history, those not so blessed frequently sought in vain for a natural technique that the great pianists themselves could not fully explain. Prejudiced against or simply indifferent to objective intellectual inquiry, the many followed systems erected upon preconceived technical notions—biased methods, contrary to natural law and distorted in perspective.²⁶

--Reginald Gerig, *Famous Pianists & Their Technique*,

Jaëll's work and her visionary quest to transform the teaching of piano is best understood through the historical context of the development of pianism and the resulting field of study, piano pedagogy. While piano technique describes how the piano is played, and pianism encompasses technique, artistry and composition at the piano, pedagogy is the study of how piano playing is taught. The history of pianism was deeply influenced by technological, cultural, and sociopolitical forces in the nineteenth century. These included the invention and design of the piano, the rise of the middle class, and the introduction of music making in the private and public sphere. While these forces moved together in a continuous evolution, pedagogy was often

²⁶ Gerig, *Famous Pianists*, 3.

one or two generations behind in responding.²⁷ Pedagogy itself was shaped by ideological paradigms including Romanticism and Enlightenment philosophy.

In this chapter, I explore the interrelationships between piano design, repertoire, and culture and how they influenced pedagogy in the first half of the nineteenth century. I demonstrate how, at the end of the century, significant developments that had already occurred forced pianists to confront a need for pedagogical change. Marie Jaëll saw the need for change in how the piano was taught and was one of the first voices to answer. Born in the mid-century, she received a typical musical education, steeped in German and French repertoire and training methods. Examining the tradition in which she was trained sets the stage for an examination of her method in Chapter 3.

2.1 Technology and Culture

The pianoforte, invented around 1700 by the Italian Bartolomeo Cristofori at the court of Medici, opened up new avenues of expression than were offered by the harpsichord, clavichord, and organ. While the harpsichord had the capacity of producing a loud, bright tone, the sound decayed quickly; the clavichord, while responsive to nuances of touch pressure nuances, was quiet. The piano, with its capacity for achieving a wide range of dynamics and sustaining tone, combined the advantages of both instruments. The early pianofortes had wooden frames and

²⁷ Debra Brubaker, "A history and critical analysis of piano methods published in the United States from 1796 to 1995" (Ph.D., University of Minnesota, 1996), 10. "There always has existed a time gap between new demands of literature and pedagogical writings addressing them."

hollow hammers, which were typically covered with a thin layer of leather. Cristofori's design was continued by piano makers in Italy and improved upon by German manufacturers who focussed on escapements that would return the key back to its place quickly and quietly.

English and French piano builders began to produce pianofortes at the end of the eighteenth century. They preferred heavier frames and greater tension in their piano design, which gave the instrument more volume and expressive power. Some master builders included Clementi and Broadwood in London and Erard and Pleyel in Paris.²⁸ These firms experimented with better action to return the keys quickly, dampers to prevent the hitting of multiple strings, and pedals.

As the design of the pianoforte changed, it became increasingly popular among composers and keyboard players, gradually overtaking other keyboard instruments in popularity. Composers wrote music specifically for the piano that employed the effects of the piano's range, pedals and tone. The new repertoire stretched the limits of the instrument's capacity and forced piano builders to respond with innovative solutions to the limitations of the instrument.

Along with the technological advancements in the early nineteenth century, sociocultural factors set the stage for the piano to move to the forefront of musical life. Prior to the nineteenth century, music making was in the domain of educated or privileged people, supported by the

²⁸ Edwin M. Ripin et al., "Pianoforte," ed. Deane Root (2001).
<https://www.oxfordmusiconline.com/grovemusic/view/10.1093/gmo/9781561592630.001.0001/omo-9781561592630-e-0000021631>.

church or court. Music often served as background music or accompaniment, or for ceremonial purposes. With the rise of an upwardly mobile middle class during the Industrial Revolution, music making began to be centred increasingly around the home and salon.²⁹ Growth in middle-management work for men gave higher incomes to families and more leisure time. Having a piano in the home and someone to play it was seen as a sign of culture and refinement; self-improvement and elegant accomplishments were signs of success. Both the Viennese of the *Biedermeier* period and the English of the Victorian era idealized the drawing room with the family gathered around the piano as a mark of respectability and social advancement.

A public concert scene began to emerge after 1820, evidenced by posters and newspapers advertising public performances. An early nineteenth-century “modern aesthetic” that valued progress opened up opportunities for the brilliant performer, and an impressive personality could distinguish himself irrespective of nationality, class, or birth. Composer-pianists took advantage of the opportunity to show off the new possibilities of the piano and their skill, performing their own pieces and variations of familiar themes. Many of these pianists possessed a dazzling degree of technical proficiency that came from the finger-school techniques of the clavichord and harpsichord methods. A *bravura* style of performance grew out of eighteenth-century

²⁹ This general term of middle class included “shopkeepers, clerks and lower-level professionals” and a second elite that included the military and others with links to aristocracy. See John Rink, “The profession of music,” in *The Cambridge History of Nineteenth-Century Music* (2002), 57.

improvisational practice, without the taste and restraint so valued by the previous generation.³⁰ Some of the most distinguished pianists of the early nineteenth century included Johannes Hummel (1778-1837), Ignaz Moscheles (1795-1870), and Friedrich Kalkbrenner (1785-1849).

As the piano gained in popularity in the salon and concert hall as both a solo and ensemble instrument, the volume of the instrument became more important. Piano makers responded with heavier hammers and thicker strings with more tension, which in turn required a heavier frame to support. The force required from the player to depress a key more than doubled between 1800 and 1860.³¹ The key length increased along with the height of the black keys in order to create a deeper depth. These changes in structure and design influenced technique because the piano required “a more vigorous attack with extended fingers rather than the quiet hand and curved finger techniques of the 18th century.”³² The most significant change for the piano was the invention of the double escapement action in the 1820’s by French piano builder Erard, which allowed a fast return of the hammer to its place after playing, enabling rapid repeated notes.

The rise of the piano had an influence on the publishing industry. In the early part of the century, the publishing industry saw an explosion of arrangements of orchestral music and opera

³⁰ Schonberg’s description is particularly vivid: “There were Thalberg, Dreyschock, Gottschalk, Herz and the other virtuosos—showmen all, thunderers, salonists, matinee idols, tinklers in their several ways.” Schonberg, *The Great Pianists*, 217.

³¹ Ripin et al., "Pianoforte."

³² Ripin et al., "Pianoforte."

themes for piano and piano four hands. Over time, a growing repertoire of pieces written specifically for the solo piano player emerged, with encouragement from publishers. These included easy or intermediate works for the amateur player and advanced works composed by virtuoso players. Another area of the publishing market was directed toward piano students and teachers in the form of training manuals, methods, or tutors.

2.2 Piano Instruction (1800-1870): modes and methods

As piano pedagogy followed the shifting currents of pianism, the established modes of transmitting pianistic knowledge were primarily through two channels. These included people--teachers and mentors, and published material--didactic works written for training purposes.

Private Teachers and Institutions

From the late eighteenth century onward, piano instruction was often given in private settings. Reputable performers who became teachers could make a respectable or even good living teaching private lessons, partly due to the frequency of lessons.³³ Carl Czerny and Johann Hummel in their treatises advocated a daily hour-long lesson with the teacher for beginners.³⁴

³³ Elizabeth Cook et al., "Paris," (Oxford University Press, January, 2021 2001). For example, Chopin only performed publicly seven times, but he taught at least eight lessons a day in Paris for a fee of twenty French Francs a lesson.

³⁴ Gerig, *Famous Pianists*, 70.

Franz Liszt's lessons to the nineteen-year-old Valerie Boissier in 1831 were every three or four days during her stay in Paris and usually lasted two hours.³⁵

Institutions, such as private schools or state-funded conservatories, also played an important role in the transmission of pianism, providing a gathering place for musicians and also perpetuating traditions. The first half of the century saw a proliferation of schools in major centres in Europe: Paris (1795), Milan (1809), Naples (1809), Prague (1811), Vienna (1817), London (1822), Brussels (1832), Leipzig (1843), and Munich (1846).³⁶ Some were state-run such as in Paris;³⁷ Others were private, such as the one set up by Felix Mendelssohn in Leipzig and directed by Moscheles after his death. Later in the century, important conservatories were set up in Valencia, Spain, and St. Petersburg and Moscow in Russia, which made music education accessible to large numbers of students. Due to differences in instrument manufacturing in these locations, as well as different teaching traditions, playing style/technique varied somewhat according to geographic locations.

³⁵ J. Q. Davies, *Romantic Anatomies of Performance* (Berkeley: University of California Press, 2014), 155. Czerny taught the young Franz Liszt for free. Liszt charged expensive rates in the 1830's but later in life did not ask fees for his lessons.

³⁶ Schonberg, *Great Pianists*, 123.

³⁷ Cook et al., "Paris." "On 3 August 1795 the Conservatoire was legally founded by the National Convention, and included the personnel of the older *École Royale de Chant*. The first group of 351 pupils entered in October 1796, and were taught by 115 professors." It was closed in 1816 and then opened again in 1822 under a new name: the *École Royale de Musique*.

Pedagogical Materials: methods and treatises

Another important resource for the transmission of pianistic knowledge was through published materials of instruction, or didactic works, which were designed to be used under the guidance of a teacher. While early methods and treatises from the eighteenth century were directed to keyboard players in general, as the pianoforte changed and grew in popularity there was a need to address the particular needs of the pianist. This need was answered by a huge influx of instructional materials between 1785 and 1804. James Hook, Daniel Gottlieb Turk, Johann Peter Milchmeyer, Ignaz Pleyel, Louis Adam, Jan Ladislav Dussek, and Muzio Clementi all wrote methods for pianoforte.³⁸ Mainly intended for the amateur player, these methods included basic fundamentals or rudiments such as clefs, note values, accidentals, slurs, ties, ornaments, and rules for fingering. Many of these tutors contained “lessons” that presented scales and arpeggios up to four or five sharps or flats. Some also included musical examples, and later, repertoire. While some of the early books presented material in a progressive fashion, some did not, since it was assumed that the teacher would organize and present the work according to the needs of the student. Many early manuals included sparse descriptions of how to play because it was the teacher was expected to demonstrate proper posture and correct habits at the instrument.

³⁸ Lora Deahl, "Robert Schumann's *Album for the Young* and the Coming of Age of Nineteenth-Century Piano Pedagogy," *College Music Symposium* 41 (2001): 28, <http://www.jstor.org/stable/40374451>.

Early pianoforte methods were written by composer-pianists born before 1800 who were educated in the harpsichord tradition. These “bridge pianists” included the French composer-pianists: Jean-Louis Adam, Friedrich Wilhelm Kalkbrenner, and Henri Herz; the pedagogues of the English school: Muzio Clementi, and his students Johann Cramer and John Field; and the Germans: Johannes Hummel, Carl Czerny, and Ignaz Moscheles.³⁹ Among these pianists there was little agreement about the correct position at the piano. Some advocated sitting in the centre of the piano like harpsichordists, others said to sit slightly to the left or to the right of centre. Some recommended a flat hand, while others directed that the palm should lean slightly towards or away from the thumb. They seemed to all agree on one principle of correct pianoforte playing, however, derived from harpsichord technique, and that was the necessity of developing facility in the fingers while keeping the arm and body still.

The manuals of the English-naturalized Muzio Clementi (1752-1832) are fairly representative of didactic works in the first half of the century. Clementi’s *Introduction to the art of playing on the pianoforte; Containing the Elements of Music; Preliminary notions on Fingering with Examples; and Fifty fingered Lessons* (1801) included, as the title mentions, basic rudiments, scales and exercises, as well as details about legato and staccato playing. He broke away from the harpsichord tradition of releasing notes before their full value and made legato playing--connecting notes by not releasing each key until the next one was played--a

standard for the pianoforte.⁴⁰ Clementi also included an anthology of keyboard music, repertoire selections for the developing pianist, in alternating major and minor keys, following the circle of fifths. For each key, Clementi composed a prelude that he followed with a piece in the same key by another composer. He drew from works by Bach, Handel, Scarlatti, Couperin and Rameau as well as more contemporary composers Haydn, Pleyel and Beethoven.⁴¹ His famous *Gradus Ad Parnassum*, Opus 44 (1817-26), a three-volume set of 100 exercises and etudes, served as standard repertory for pianists of the nineteenth century and is still included in recommendations today. Clementi's playing style and works were well-suited for the English piano, which was heavier and held more tension than the Viennese piano, and capable of more volume and virtuoso effects. In his didactic works, however, he falls short of describing *how* to achieve the tone, clarity and virtuosity that he was known for.⁴²

Two Viennese composer-pianists, Johann Hummel (1778-1837) and Carl Czerny (1791-1857) were well-regarded virtuosos and teachers whose manuals, written after the invention of the double escapement action, added significantly in the way of content compared to previous methods. Hummel's *The Complete Theoretical and Practical Course of Instructions on the Art of Playing the Pianoforte* (1828), which was "one of the most important works on technique and piano playing of the entire nineteenth century," detailed some aspects of correct technique as

⁴⁰ Schonberg, *The Great Pianists*, 44.

⁴¹ Dorothy de Val and Cyril Ehrlich, "Repertory and canon," in *The Cambridge Companion to the Piano*, ed. David Rowland (Cambridge: Cambridge University Press, 1998), 125.

⁴² Brubaker, "A history and critical analysis of piano methods," 24.

well as including repertoire for study.⁴³ Hummel encouraged good posture, which he characterized as arms falling naturally to the side with elbows slightly turned in, but not touching the body. The arms were not to assist in the power of playing or force of tone but only to move the hands, which were to be somewhat rounded and in a “free and quiet position” with fingers close to keys but not resting on them. He advocated a sensitive touch that allowed “every possible gradation” in the search for beauty, which he described as “whatever is tasteful, pleasing, and ornamental.”⁴⁴

Hummel’s recommendations about the role of the teacher and lessons served as a standard of training throughout the century. Along with Czerny, he suggested that students begin with an hour of private instruction each day for the first six months to a year, in order to avoid the acquisition of bad habits during the three hours of daily practice he recommends. The teacher, who should be strict but warm, should limit the student from playing too fast and help him develop a strong sense of rhythm. In addition to over 2200 technical exercises and musical examples, Hummel composed *60 Practical Pieces*, which he included in his list of pieces for the beginning pianist. As well as his own works, he included those of Pleyel, Dussek, Kuhlau,

⁴³ Schonberg, 110, Gerig, *Famous Pianists*, 70.

⁴⁴Johann Nepomuk Hummel, *A complete theoretical and practical course of instructions on the art of playing the piano forte : commencing with the simplest elementary principles and including every information requisite to the most finished style of performance* (London: T. Boosey). Vol III, 64-65, Quoted in Gerig, *Famous Pianists*, 77.

Clementi, Czerny, and others, arranged according to difficulty. More advanced students could tackle Mozart, Haydn, and Beethoven as well as J.S. Bach and G.F. Handel.⁴⁵

Czerny, student of Beethoven and teacher to Liszt, was just as focused on the power of finger exercises in his landmark *Vollständige theoretisch-praktische Pianoforte-schule*, Op. 500, published in 1837. Included with his prolific exercises to train the pianists' fingers was the axiom that "practice is the great Magician, who not only makes apparent impossibilities possible, but even easy."⁴⁶ Almost ten years after the publication of the first three volumes, Czerny added a fourth volume that included a list of recommendations for repertoire study. In this anthology, he included no works written before Mozart's Piano Sonata K. 310 (1778), showing the preference at this time for works of "contemporary composers" written for the piano.

Some other major treatises from closer to the middle of the century in France were written by Henri Herz, and Ignaz Moscheles, teachers of Marie Jaëll herself, both of whom perpetuated major ideas from the harpsichord tradition. Like Clementi, Cramer, Hummel and Czerny, these composers "supplied a wealth of finger technique material, but no adequate blueprint as to how to use it."⁴⁷ The resounding message was that students would develop a facile technique through hours of diligent practice. Teachers could communicate their individual

⁴⁵ Hummel, *A complete theoretical and practical course of instructions on the art of playing the piano forte : commencing with the simplest elementary principles and including every information requisite to the most finished style of performance*, 109-10. Quoted in Gerig, *Famous Pianists & Their Technique*, 74-75.

⁴⁶ Gerig, 108.

⁴⁷ Gerig, 80.

instruction personally through demonstration or physical manipulation during lessons, otherwise, students were left to themselves.

Mechanistic Paradigm

While many nineteenth-century instructional materials gave lip-service to the idea that technique is in service of art, the emphasis was placed strongly on the physical aspects of pianism. Little was said about how to achieve artistic ends. The emphasis on developing technique through extensive practice was influenced by early nineteenth-century theories of education. Inspired by the Enlightenment and scientific method, many educators considered that in order to master a skill it must be broken down into its component parts and then put back together to create an artistic whole. Musical learning was viewed like a ladder with simple skills on the bottom and matters related to musical interpretation were “saved for the top, to be discussed and practiced last.”⁴⁸

Contemporary views about the relationship between the human body and the mind added support to the mechanistic approaches to teaching. According to Descartes’ influential philosophy, the mind and body were distinct elements “oppositional and incapable of merging.”⁴⁹ The deceptive body was emotional, linked to passion, or instincts and reflexes; while the mind was the seat of reason and higher intellectual powers. The Romantics idealized the

⁴⁸ Laor, "Nineteenth-Century Mechanistic Paradigm," 10. Two influential theorists at this time included the Friedrich Guthmann and Johann Pestalozzi.

⁴⁹ Marcia J. Citron, *Gender and the Musical Canon* (Urbana: University of Illinois Press, 2000), 52-53.

vitality and passionate musical expression associated with the body, but these were seen as manifestations of a higher level of development or only appropriate for natural artists. For ordinary students, introducing musical elements too early could be dangerous. In this pedagogical approach, aesthetic or expressive elements of music, that came from the feelings and heart, must be controlled or handled carefully lest the student be carried away by their emotional nature or physical impulses.

A thinly-veiled ideology implicit in the methods of training students, many of whom were young women, is that students must be protected from their nature, as exhibited by expressive bodily movement. Carl Czerny wrote in his *Letters to a Young Lady on the Art of Playing the Pianoforte* (1838) that “the fingers are little disobedient creatures, if they are not kept well reined in; and they are apt to run off like an unbroken colt as soon as they have gained some degree of fluency.”⁵⁰ The feminine side of piano playing, which emphasized beauty, grace and refinement, was characterized by controlled and reserved playing without bodily movement. Since femininity was associated with child-like innocence, quickness, and agility, these elements were also emphasized in the training of women.⁵¹

⁵⁰ Carl Czerny, *Letters to a Young Lady on the Art of Playing the Pianoforte* (London: R. Cocks, 1839), 23., quoted in Davies, *Romantic Anatomies of Performance*, 172.

⁵¹ See Ellis, "Female Pianists and Their Male Critics in Nineteenth-Century Paris." Ellis discusses the gendered discourse surrounding issues such as piano technology, repertoire, mechanical practice aids, body movement, and notions of femininity and masculinity at the piano in the first half of the nineteenth century.

Another reason for a lack of emphasis on aesthetic principles in teaching was that some teachers believed these elements could not be taught to those who did not already possess an aptitude for it.⁵² Hummel placed his emphasis on “correctness of performance,” believing that while expression could be awakened or cultivated by listening to music finely performed, “properly speaking, . . . it can neither be taught nor acquired.”⁵³ Felix Mendelssohn, in a letter to Moscheles in 1830 wrote, “I believe that the principal thing that can and ought to be taught is sound practical work, sound knowledge of sound music, etc. Out of that all other knowledge grows from itself and what is beyond is not a matter of teaching but must come as a gift from above.”⁵⁴

The Industrial revolution, with its promise of progress and efficiency through machines, inspired a fascination with precision, dexterity, and evenness in musical pursuits.⁵⁵ Exercises,

⁵² Charise Hastings, "Musical Practicing: A Hermeneutic Model for Integrating Technique and Aesthetics," *The Journal of aesthetic education* 48, no. 4 (2014): 50, <https://doi.org/10.5406/jaesteduc.48.4.0050>. One influential teacher in the late nineteenth century, Theodor Lechitesky (1830-1915) was quoted by his student as saying, “If you don’t feel it you can’t be taught it. Either you can play Schumann or you can’t.”

⁵³ Hummel, *A complete theoretical and practical course of instructions on the art of playing the piano forte : commencing with the simplest elementary principles and including every information requisite to the most finished style of performance*. Vol. III, 39-41., quoted in Gerig, *Famous Pianists*, 75-76.

⁵⁴ Felix Mendelssohn, *Letters of Felix Mendelssohn to Ignaz Moscheles* (New York: Book for Library Press, 1970), 242., quoted in Laor, "Nineteenth-Century Mechanistic Paradigm," 7.

⁵⁵ Julia Kursell, "Visualizing Piano Playing, 1890-1930," *Grey Room*, no. 43 (2011): 69, https://doi.org/10.1162/GREY_a_00027. Kursell describes the late nineteenth-century aesthetic that valued evenness and regularity as evidenced by measuring devices that revealed the irregularity of individual players and the inability of the pianist and listener to observe or sense the irregularity. After 1900, the influence of the player piano, which could perform perfectly regular playing made listeners realize that this was not the ideal they had sought. Overly mechanized playing was dry and uninteresting. The musical aesthetic shifted toward individual expression and nuance.

especially “five-finger drills,” were at the centre of many nineteenth-century piano methods in order to develop speed and agility. A notable example was Charles Hanon’s *The Virtuoso Pianist in 60 exercises calculated to acquire agility, independence, strength and the most perfect equality of the fingers as well as the flexibility of the wrists*.⁵⁶ Published in France in 1873 and Germany and America in 1900, the instructions to practice them *forte* and as quickly as possible came with this promise: “if all five fingers of the hand were absolutely equally well trained, they would be ready to execute anything written for the instrument.”⁵⁷

The idealization of technology had its extreme manifestation in the use of mechanical devices to assist in the training of the student. Johann Bernhard Logier (1777-1846), a German-born inventor and pianist, invented and marketed the Chiroplast, a mechanical contraption designed to help the student maintain a correct position at the keyboard and prevent bad habits.⁵⁸ His group piano lessons drew much attention in Europe and resulted in him later being invited by the Emperor of Prussia to set up schools in Germany.⁵⁹ Other gadgets invented to prevent the arms and body from moving, thus isolating the fingers, included Henri Herz’s Dactylion, which the inventor claimed would reduce practice time while improving speed and virtuosity, and Kalkbrenner’s *Guide-mains* or hand-guide. The latter was designed to hold the arm steady so that

⁵⁶ Charles Louis Hanon, *The Virtuoso Pianist* [Le Pianiste virtuose en 60 exercices calculés pour acquérir l’agilité, l’indépendance, la force et la plus parfaite égalité des doigts ainsi que la souplesse des poignets], trans. Theodore Baker (New York: G. Schirmer, 1900).

⁵⁷ Hanon, *The Virtuoso Pianist*, preface., cited in Gerig, *Famous Pianists*, 235,

⁵⁸ Gerig, 124-30.

⁵⁹ Gerig, *Famous Pianists*, 124.

the wrist would serve as the fulcrum; this was an important feature of Kalkbrenner's 1820 *Méthode*.⁶⁰ Liszt used a version of the hand-guide made of mahogany in the 1830's as an aide to his student, Valerie Boissier.⁶¹ Camille Saint-Saëns, who disagreed with the tool in principle, thought it had some value in focussing the student's attention on the development of touch.⁶²

Unfortunately, dissociating technical skill from mental effort carried the risk of reinforcing bad habits through mindless repetition or turning a student away from the study of piano altogether. Some pedagogues advocated strict parental involvement to keep the student engaged;⁶³ others took a softer approach that included distraction. Czerny's recommendation that since "the student will probably find these exercises rather dry let him place a book or newspaper on the piano-desk to read while playing them,"⁶⁴ was taken by Liszt and Kalkbrenner.⁶⁵

A Changing Landscape: Pianism after 1840

In the 1820's to 1840 the Romantic spirit of individuality, spurred on by improvements to the piano, was taken to excess with the bravura style of piano playing. The rise of a younger

⁶⁰ Friedrich Wilhelm Michael Kalkbrenner, *Méthode pour apprendre le piano-forte à l'aide du guide-mains; suivie de douze études. Op. 108* (Paris: I. Pleyel).

⁶¹ Davies, *Romantic Anatomies of Performance*, 156.

⁶² Gerig, *Famous Pianists*, 136.

⁶³ Laor, "Nineteenth-Century Mechanistic Paradigm," 14-15. "The directive asking parents not to leave their child unsupervised at the piano was widely accepted at the time. Hence, according to Guthmann, in the first 18 months of instruction students should not practice alone."

⁶⁴ Harriette Brower, *Piano Mastery Second Series* (New York: Frederick A. Stokes, 1917), 211. The American pianist Henry Holden Huss quoted Czerny.

⁶⁵ Davies, *Romantic Anatomies of Performance*, 155.

generation that was more musically discerning and the influence of the “historical movement” caused a change in aesthetic values. Journals and magazines published reviews and criticisms of all aspects of musical life, including performance, composition, and pedagogy. The readership of these journals and reviews formed an increasingly educated audience who valued artistry and musical sophistication over virtuosity and showmanship. Robert Schumann wrote “The public has lately begun to weary of virtuosos, and, as we have frequently remarked, we have too.”⁶⁶

The historical concerts of Moscheles and Mendelssohn in the late 1830’s, as well as the performances of Beethoven’s Sonatas by Moscheles and Clara Schumann, led to a resurgence of Classical and early music. Historical anthologies such as Aristide and Louise Farrenc’s *Le trésor des pianistes* (1861-1872)⁶⁷ in the 1860’s and 70’s also brought recognition and renewed emphasis on the works of past composers. Unlike the composer-virtuosos of the 1820’s and 30’s, who had been able to rely on their own “specialty” skills and played mostly their own pieces,

⁶⁶ Robert Schumann, *On Music and Musicians*, trans. Paul Rosenfeld, ed. Konrad Wolff (Berkeley: University of California Press, 1983), 81. Schumann goes on to speculate that the virtuosos themselves sense this “if we may judge from a recently awakened fancy among them for emigrating to America; and many of their enemies secretly hope they will remain over there; for, taken all in all, modern virtuosity has benefited art very little.” Even after the tastes of European musical society changed and these pianists began to be criticized for their lack of depth, versatility and artistry, many of them continued to perform to audiences in America, notably Henri Herz, Leopold de Meyer, Louis Moreau Gottschalk, and Alfred Jaëll.

⁶⁷ Aristide Farrenc, *Le trésor des pianistes; collection des oeuvres choisies des maitres de tous les pays et de toutes le époques depuis le XVIe siècle jusqu'a la moitié du XIXe . Recueillies et transcrites en notation moderne par Aristide Farrenc avec le concours de Louise Farrenc* (France Cramer, Beale et Chappell, 1861).

pianists in the second-half of the nineteenth century were expected to be able to play works of many different composers and style periods.⁶⁸

Placing value on composers of the past also was part of the establishment of a canon of repertoire that became increasingly familiar to audiences. By the 1870's memorization in performance was considered important along with greater value placed on the composer's intention. Faithfulness to the musical score trumped embellished renderings.⁶⁹ These changes acted as a major impetus towards the creation of better training methods. Since pianists were expected to play the works of different composers and style periods--accurately, memorized, and with a high level of artistry, they would need teachers to prepare them.

Changes in the design of the piano itself also created a need for a change in piano technique. The heavier hammers and larger keys that became standard during the 1850's and 60's required a different physical action. When the size of the piano expanded to a seven-octave range, combined with the increasing tension caused by thicker strings, the wooden frame was insufficient and could break under strain of a performance. In America, this problem was compounded by seasonal changes in climate. Jonas Chickering, a Boston piano maker took out patents in 1840 and 1843 for "a metal frame with a cast-iron bridge for a square piano, and a one-piece metal frame for grands," innovations that won him acclaim at the 1851 Great

⁶⁸Janet Ritterman, "Piano music and the public concert: 1800-1850," in *The Cambridge Companion to Chopin*, ed. Jim Samson (Cambridge University Press, 1994), 13.

⁶⁹Jennifer Mishra, "Playing from Memory: Development Of A 19th-Century Performance Practice," *The American Music Teacher* 65, no. 6 (2016): 13.

Exhibition in London. The Steinway piano company, founded in New York in 1853, continued the steel-frame design and patented an over-strung model in 1859. Both American firms won important prizes at the 1869 World Exhibition in Paris, which built confidence in American brands.

Throughout the century piano repertoire evolved to make use of the larger sonorities, greater range, and volume of the piano following Beethoven. Works such as Liszt's Transcendental Etudes, Paganini Variations, and *Don Juan* required different strategies for execution than early repertoire.

Late nineteenth-century instruction

As the gap widened between the piano of the early and late nineteenth century, as the repertoire changed, and as the demands upon players became more rigorous, the need for advanced instruction became clear. For many students, this took the form of a two-stage learning process; students began their study with local teachers, using traditional materials and then progressed to an advanced teacher for a finishing education. The choice for this finishing education was often Germany, where major schools in Leipzig, Berlin, Stuttgart and Weimar attracted students from America and Europe. Unfortunately, the instruction was inconsistent and sometimes failed to meet students' expectations. Change was slow where tradition was strongest as teachers held on to outdated ideas from their own training.

A lack of training in technique was described in the account of Oscar Beringer, an English pianist who travelled to Germany in the 1870's in search of a more advanced education than he could get in London. He described how the student body at the Leipzig Conservatory represented almost every nation of students who, like him, had come to learn from the German

masters. Beringer was disappointed at the level of instruction he received at the Leipzig Conservatory, however, and left after some time in search of someone to teach “touch and technique,” which he said was “entirely ignored by the Professors at the Conservatoire.”⁷⁰

We learn more about the German methods of teaching from the accounts of several American pianists including Amy Fay, William Mason, and William Sherwood. Amy Fay detailed her lessons with several prominent teachers, including Louis Ehlert, Adolph Kullak, Franz Liszt and Ludwig Deppe between 1869 and 1875.⁷¹ During her study at Tausig’s “School for the Higher Development of Pianoforte Playing” in Berlin with Ehlert, the demands and practice were discouraging to her.

You have no idea how hard they make Cramer’s Studies here. Ehlert makes me play them tremendously forte, and as fast as I can go. My hand gets so tired that it is ready to break, and then I say that I cannot go on. “But you must go on,” he will say. It is the same with the scales. It seems to me that I play them so loud that I make the welkin ring, and he will say “but you always play piano.” And with all this rapidity he does not allow a note to be missed, and if you happen to strike a wrong one he looks so shocked that you feel ready to sink into the floor.⁷²

⁷⁰ Oscar Beringer, *Fifty Years' Experience of Pianoforte Teaching and Playing* (Bosworth & Company, 1907), 26.

⁷¹ Margaret William McCarthy, "Fay, Amy," in *Grove Music Online*, ed. Deane Root (2001). <http://www.oxfordmusiconline.com>. Amy Fay (1844-1928) was a contemporary of Marie Jaëll. Born in Louisiana, she studied piano in Boston with John Knowles Paine. At age twenty-five, she moved to Germany to study with prominent teachers including Kullak and Liszt. Her lessons with Deppe proved most influential on her technique, and she published a set of exercises inspired by him. Upon her return to Boston, she published her reminiscences and journals. Later editions are edited by her sister, Melusina Fay Peirce.

⁷² Fay Pierce, *Music Study in Germany: From the Home Correspondence of Amy Fay* (New York, NY: Macmillan Company, 1913), 49.”

Fay continued her study in Germany with Theodor Kullak, Carl Tausig, Liszt, and finally Ludwig Deppe. Many of these pianists emphasized a more natural and free use of the body in the service of artistic ends. Deppe (1828-1890) had the greatest impact on Fay, undoing her previous training. He corrected her high finger technique, which he believed caused stiffness and poor tone.

The Royal Conservatory at Stuttgart, founded in the mid-1850s by Sigismund Lebert (1822- 1884) and Ludwig Stark (1831-1884) relied on a distinctive instructional approach. The “reactionary-percussive, stiff arm technique”⁷³ taught at the Stuttgart school was taken from harpsichord traditions, but with a modern accommodation to the piano’s increased weight and tension. They encouraged a quiet upper arm with minimal forearm movement: hinging at the wrist or elbow for octaves or bravura effects; but they also taught students to hold the fingers one inch above the keys and play each note with a forcible downward strike. In their view, practice should always be done *forte* in order to develop strength and independence. If practice did not yield profitable results, then more practice was required. The circularity of this premise created a perpetual market of students, albeit somewhat frustrated.⁷⁴ Lebert and Stark published a series of method books, with five editions between 1856 and 1870, which were endorsed by leading pianists of the time including Liszt, Moscheles, and Hiller. Their books emphasized technique and musicianship with the aim of producing artistic tone, however their actual methods were

⁷³ Gerig, *Famous Pianists*, 230.

⁷⁴ Gerig, *Famous Pianists*, 230- 35.

suspect or even damaging. It was in Stuttgart that the young Marie Jaëll began serious piano study at around 1855 with Franz Hamma.⁷⁵

2.3 Enlightened Pianists and Teachers

Although mechanical practise methods aimed at developing technical proficiency were widespread, some pianists took a more holistic approach to the development of pianism. Beethoven, Chopin and Liszt were three such pianists who were called “genius,” or “revolutionary” in their own time. Acclaimed as technically strong pianists, they also played with Romantic expressiveness and artistry. Each of them departed from the pedagogical norms of the time, moving musical expression into the larger physical structures as well as the mind. Their focus was on artistry first, with technique serving as a tool for whole-souled musical expression. While Beethoven, Chopin, and Liszt each made notes about piano technique and described their intention to publish didactic works, they never wrote or published treatises or method books. Their performing inspired others in their own time and beyond, but their influence took time to be felt in the mainstream of piano pedagogy.

Ludwig van Beethoven (1770-1827) was a virtuoso player who was largely self-taught at the piano and without parallel in his own time. He admired the works of Clementi and perpetuated his ideas about legato playing in his own technique and compositions. Beethoven used the works of J.S. Bach, the etudes of Cramer and Clementi, and exercises of his own

⁷⁵ Kiener, *Marie Jaëll*, 23.

devising in his teaching.⁷⁶ His piano music was forward-looking and revolutionary in its conception of how the piano could be used for expressive purposes.

The little that is known about Frederic Chopin's (1810-49) teaching comes from the memoirs of his students and some very brief sketches that survive for a piano method. In his own teaching he included scales, Clementi's "Preludes and Exercises" and *Gradus ad Parnassum*, Moscheles' studies, Cramer's Etudes, and the works of J.S. Bach. He also taught works by Beethoven, Schubert, Weber, Mendelssohn, and a few by Liszt. Highly influenced by Italian opera, he advocated for a singing tone and encouraged his students to use vocal music as a model. He demonstrated legato playing with a flexible wrist and wrote: "It is important to make use of the fingers and no less so the employ the rest of the hand, wrist, forearm and arm. To attempt to play entirely from the wrist, as Kalkbrenner advocates, is incorrect."⁷⁷ "Chopin stands out as a truly revolutionary figure in the development of pianism,"⁷⁸ especially because of his writing for piano, which included expressive etudes, innovative in their use of harmony and texture.⁷⁹ Etudes, musical works that address technical problems in combination with musical

⁷⁶ Gerig, *Famous Pianists*, 89-93.

⁷⁷ Alfred Cortot, *In Search of Chopin*, trans. Cyril and Rena Clarke (London: Nevill, 1951), quoted in Alan Davison, "Franz Liszt and the Development of 19th-Century Pianism: A Re-Reading of the Evidence," *The Musical Times* 147, no. 1896 (2006): 41, <https://doi.org/10.2307/25434402>.

⁷⁸ Davison, "Liszt and 19th-Century Pianism," 41.

⁷⁹ Simon Finlow, "The twenty-seven etudes and their antecedents," in *The Cambridge Companion to Chopin*, ed. Jim Samson, Cambridge Companions to Music (Cambridge: Cambridge University Press, 1992), 58-60.

ideas, were an important part of the training of most students in the nineteenth century.⁸⁰

Clementi, Cramer, Hummel, Czerny, and Moscheles were important composers of etudes that, in keeping with the mechanistic view of piano learning, emphasized technical elements. Frederic Chopin, with his Etudes Op. 10 (1833) and Op. 25 (1837), approached the etude with a holistic paradigm that fused musical and technical elements. He raised the genre to a sublime art form “in which the musical ideas constitute an embodiment of the technical material, in which the music *is* the technique.”⁸¹

Some other contemporaries of Chopin and Liszt who departed from traditional playing and teaching methods include a group of pianists in the “Schumann circle”: Felix Mendelssohn⁸²

⁸⁰ Finlow, "The twenty-seven etudes and their antecedents," 61. “The basic functional requirement of the piano etude [is] that it should present a systematic encoding of a particular keyboard technique while at the same time engendering a substantial or edifying musical process.

⁸¹ Finlow, 69.

⁸² Felix Mendelssohn's (1809-47) influence was great in restoring historical works, beginning with the Gewandhaus concerts in Leipzig (1835) and the “historical soirées” with Moscheles (1837.) He founded the Leipzig Conservatory in 1843, where he persuaded Moscheles to come teach. As a teacher, Mendelssohn focussed mostly on the higher matters of art, leaving the teaching of piano technique to other teachers at the Conservatory. He told his students, “If you want to play with true feeling, you must listen to good singers. You will learn far more from them than from any players you are likely to meet with.” Gerig, *Famous Pianists*, 201.

and Robert Schumann, Clara Wieck and Frederick Wieck,⁸³ “serious musicians of the highest integrity.”⁸⁴

Robert Schumann (1810-56) exerted a strong influence on succeeding generations of pianists, including Marie Jaëll, through his critical writings as well as his compositions for piano. His *Album for the Young*, Opus 68, “not only addressed the necessity of making piano learning pleasurable for children but he also single-handedly created a new genre in piano literature - an album of titled programmatic character pieces written exclusively for children.”⁸⁵ His list of “House-Rules and Maxims for Young Musicians” was added to this album with strategies for attaining true musicianship in the form of aphorisms that instruct. Schumann was blatant in differentiating artistry from virtuosity: “Do not seek to attain mere technical proficiency—the so-called *bravura*.”⁸⁶ He advised students to practice fugues, especially those of J.S. Bach. “Let *The Well-Tempered Clavier* be your daily meat. Then you will certainly become an able

⁸³ Gerig also includes in this group Clara Schumann, née Wieck (1819-96) and her father, Friedrich Wieck, (1785-1873) as well as Johannes Brahms. Clara was known for her intellectual approach to interpretation as well as her Beethoven playing. She had an affinity for “serious” composers and focussed her prodigious performing career on the music of Bach, Scarlatti, Chopin, Mendelssohn and Brahms. Her style of playing was described as reserved and from the wrist. Gerig, *Famous Pianists*, 211. Friedrich Weick taught Clara, Robert Schumann and Hans von Bülow in Leipzig. He rejected the high fingers of the Stuttgart School and advocated sensitive touch with finger pressure and a flexible and loose wrist. He created forty-five short drills for the intermediate player to be played “with the fingers bedding the keys—with a pressure rather than a percussive stroke.” Gerig, *Famous Pianists*, 207-09.

⁸⁴ Gerig, 172.

⁸⁵ Deahl, “Robert Schumann's *Album for the Young* and the Coming of Age of Nineteenth-Century Piano Pedagogy,” 34-35. Deahl considers “titled instructive pieces which were actually exercises, etudes, dance pieces, arrangements of opera tunes or other popular music, folk tunes, church music, potpourris, sonatinas, or rondos” outside of this genre.

⁸⁶ Schumann, *On Music and Musicians*, 32.

musician.”⁸⁷ He agreed with Mendelssohn that vocal music would help the student develop musicality in the truest sense, and he encouraged singing in choirs, especially the middle voices.⁸⁸ The foundation of a good ear and an ability to anticipate the next passage would be improved upon not “by shutting yourself up all day like a hermit, practicing mechanical exercises, but by a vital, many-sided activity.”⁸⁹ Inner hearing, as described by Schumann, was evident in Liszt’s playing and was an important part of Jaëll’s method.

The above-mentioned enlightened pianists and composers played a formative role in Jaëll’s musical and pedagogical development in several ways. Her own performance repertoire, as well as her teaching repertoire, included the music of Beethoven, Chopin, and Liszt, Robert Schumann, and Felix Mendelssohn as well as J.S. Bach and Franz Schubert. She included their works in her method believing that students would learn about musical artistry from the music of the masters itself. Above all, she was inspired by their holistic approach to musical learning, “deriving from Romantic philosophy, which emphasized that the whole of an object, or more specifically the whole of an artwork, cannot be methodically reduced to the sum of its discrete parts.”⁹⁰

Franz Liszt

⁸⁷ Schumann, 33.

⁸⁸ Schumann, 34.

⁸⁹ Schumann, 33-34. Besides orchestral and choral work, other many-sided activities included reading the great poets and exercising outside.

⁹⁰ Laor, "Nineteenth-Century Mechanistic Paradigm," 6.

Franz Liszt (1811-86) was the most important pianistic influence on Marie Jaëll and arguably on nineteenth-century pianism in general. As an innovative performer he embodied the Romantic artist and what has been called “the cult of genius.” He was also a huge influence on piano pedagogy directly because of the number of pianists that he personally taught. Liszt’s effect on audiences was documented many times by those who heard him perform;⁹¹ Marie Jaëll herself described the effect of both hearing him and seeing him play in 1868 as a transforming experience. In the last few years of his life, Liszt was also a personal friend and mentor to Jaëll and a champion of her music. Liszt’s performing and teaching was an important source of inspiration toward her focus on pedagogy after his death.

Liszt was so caught up in teaching, composing, and responding to thousands of letters of each year that he did not take the time to document his methods or technique. However, we learn much about his early teaching from the diaries of Madame Caroline Boissier, who detailed the lessons that Liszt gave to her daughter Valerie in Paris from 1831-32. Later in his life, Liszt taught many students in a master-class format in Weimar and students recorded their impressions of the maestro.

Liszt was a student of Czerny and was educated with traditional methods, including exercises and etudes by Clementi, Cramer, Moscheles, and Czerny himself. He was familiar with

⁹¹ For example, Clara and Robert Schumann, Hector Berlioz, and others. Katharine Ellis, "Liszt: the Romantic artist," in *The Cambridge Companion to Liszt*, ed. Kenneth Hamilton (New York: Cambridge University Press, 2005). See also Schonberg, *The Great Pianists*, 158-59. Schonberg quotes Charles Hallé, Ignaz Moscheles, the Schumanns, and others.

the more recent compositions of Chopin and Kalkbrenner, but his pianistic feats transcended these earlier teachers and methods. To some his virtuosity seemed supernatural, a gift from the gods, but the real source of Liszt's incredible virtuosity was many hours of solitary work on technical exercises.⁹² Prior to 1830, although a renowned pianist, Liszt felt frustration at his inability, in the words of Caroline Bossier, "to express with his fingers all the feelings which weighed upon him."⁹³ Liszt described how he undertook a serious study of technique in an attempt to free himself from the restrictions of his fingers. He emphasized the importance of technical exercises for his own development and that of his student Valerie. "[Liszt] stressed the great need of flexing and relaxing the fingers in all directions by multiple exercises for at least three hours day; these exercises would have included varied scales in octaves, thirds, arpeggios in all their inversions, trills, chords, and, finally, everything that one is capable of doing."⁹⁴ In a letter from May 1832, to his friend Pierre Wolf, Liszt described how he practiced exercises four to five hours a day, including thirds, sixths, octaves, tremolos, repeated notes, cadenzas.⁹⁵

Liszt created a set of exercises for Valerie Bossier, in 1831-32 that he continued to refine and work on later in his life. A modern editor describes how Liszt "worked on this project for

⁹² Davison, "Liszt and 19th-Century Pianism," 38-39.

⁹³ Auguste Boissier, "Liszt Pedagogue: a Diary of Franz Liszt as Teacher 1831-1832," *The Liszt Studies, essential selections from the original 12-volume set of Technical Studies for the piano* (1973): xvii., quoted in Davison, "Liszt and 19th-Century Pianism," 38.

⁹⁴ Boissier, "Liszt Pedagogue: a Diary of Franz Liszt as Teacher 1831-1832," xvii., quoted in Davison, "Liszt and 19th-Century Pianism," 39.

⁹⁵ Davison, "Liszt and 19th-Century Pianism," 39.

fourteen years, from 1866 to 1880, and the result was a monumental work, filled with new concepts and new forms of practice, that had no comparison with any other system or method written before.”⁹⁶ Julio Esteban explains how Liszt’s approach is different:

Following the same method of firmly holding down four fingers the remaining finger is made to use a full range of dynamics, all kinds of accents and, what was positively new then, different types of rhythms. By doing this, one gains in every aspect and perhaps most important of all, in the question of mental concentration. As one is involved with the continuous changes, the boredom of the long, even repetition is avoided...And this is only the first page. Later, he goes on with free five-finger exercises using all possible combinations of articulation and dynamics.⁹⁷

Although the exercises were not published until a year after Liszt’s death, the preface includes Liszt’s own words: “It will be useful to exercise the fingers, the ears and the intelligence simultaneously and to study, together with the mechanism, the dynamics and rhythm inherent in the music. Consequently, these first exercises should be practiced with every degree of intensity: *crescendo*, from *pianissimo* to *fortissimo* and *diminuendo*, from *fortissimo* to *pianissimo*.”⁹⁸ His use of variety in the execution would help to maintain mental alertness as well as train the touch, developing the fingers, the ears and the intellect at the same time. Mental concentration in the practice of exercises was an innovation from the mechanical repetition that had preceded him. This aspect of Liszt’s teaching directly and significantly influenced Marie Jaëll and the

⁹⁶ Julio Esteban, "Technical Exercises of Franz Liszt," *American Music Teacher* Vol. 20, No. 2 (November/December 1970): 28, <https://www.jstor.org/stable/43537501>.

⁹⁷ Esteban, “Technical Exercises,” 28.

⁹⁸ Franz Liszt and Julio Esteban, *Technical Exercises for the Piano; Julio Esteban, Editor* (New York, Alfred Music Company, 1971)., quoted in Christopher Berg, *Practicing Music by Design: Historic Virtuosi on Peak Performance* (Routledge, 2019), 72.

development of her pedagogy. She too emphasized the importance of preparatory technical exercises that included varieties of dynamics, rhythm and “every kind of touch.” Not only the physical, but the mental development was paramount in her conception of true artistry at the piano.

As a mature teacher, Liszt did not speak much about technique or exercises in his master classes. The students that came to play for him were already greatly advanced and possessed a high degree of technical skill. One student, Carl Lachmund said in 1882,

Liszt’s teaching cannot be codified; he strove for the spirit of the work; and music, like religion, has no language; he taught as Christ taught religion, in an allegorical way, or by metaphor. But magical was the effect of his influence. Those sufficiently advanced to understand, acquired from the great master what they could not have found anywhere else in the world, then or now, at whatever price. Of plain technic he said little or nothing. Why should he have done?⁹⁹

Lachmund describes the spiritual, intellectual, and literary elements in Liszt’s teaching. For example, he read literature to his students in order to improve the condition of their souls, as when he read Victor Hugo’s “Ode to Jenny” to Valerie Boissier while she practiced a Moscheles etude.¹⁰⁰

Another aspect of Liszt’s playing and pedagogy that has been much misunderstood is regarding the use of the body. Davison points to several original sources, including the diaries of

⁹⁹ Carl Lachmund and Alan Walker, *Living with Liszt : from the diary of Carl Lachmund, an American pupil of Liszt, 1882-1884* (Stuyvesant, NY: Pendragon Press, 1995), 14., quoted in Davies, *Romantic Anatomies of Performance*, 172.

¹⁰⁰ Davies, *Romantic Anatomies of Performance*, 172.

Madame Caroline Boissier from 1832, and the American student Amy Fay in the 1870's, to illustrate that Liszt's technique very much relied on wrist movement. Inherent in this technique, however, was ease and economy of movement. Amy Fay's journals record that Liszt encouraged little hand movement but a supple wrist, and he played close to the keys "in a slanting sort of way" with very little motion.¹⁰¹

Although Marie Jaëll met Liszt around the time of her wedding in 1866, she did not hear him perform until 1868. She described her response to hearing him play in her book *Les Rhythmes du regard et la dissociation des doigts*:

When I first heard Liszt play in 1868, all my aural faculties seemed to be transformed at the instant the concert started. Such a transformation struck me much more than the playing itself. While I was listening to this music, so different from what I had heard till then, I felt my thoughts spin around as if they had acquired the capacity to move to and fro, independently of my will, by paths I did not suspect.¹⁰²

Jaëll's close association with Liszt was at the end of his life when spirituality and connection to his inner artist were most important to him. His use of mental practice and his emphasis on the inner workings of the musician's mind were surely heightened by his spirituality. However, Liszt's spiritual and mental connection to the music and the sense that his body was responding to his inner conception of the music were apparent in his playing much earlier. Wilhelm von Lenz, recalling Liszt's 1828 performance fifty years later, said, "Do not imagine that Liszt does anything—he 'does' nothing at all; he 'thinks,' and what he thinks takes on this form. That is the

¹⁰¹ Pierce, *Music Study in Germany*, 291.

¹⁰² Marie Jaëll, *Les Rhythmes du regard et la dissociation des doigts* (Paris: Fischerbacher, 1906), 3. Quoted in Guichard, *Marie Jaëll the Magic Touch, Piano Music by Mind Training*, 22.

process. Can it really be called piano-playing?”¹⁰³ His description places Liszt’s relationship with the piano in terms that are immaterial. This sense of Liszt as a spiritual and mental creator of the music as much as a physical creator was also described by Caroline Boissier, “His touch is absolutely his own, and it transforms the sound of the instrument...He coaxes it, possesses it, makes it resound to his heart. It is no longer a piano—but storms, prayers, songs of triumph, transports of joy, heart-rending despair.”¹⁰⁴

Amy Fay, describing Liszt’s hand position at the keyboard said, “As Liszt is a great experimentalist, he probably does all these things by instinct and without reasoning them out.”¹⁰⁵ While Liszt had unlocked the secrets of virtuosity at the piano intuitively, pianists and pedagogues after him took on the task of analyzing and making them known. Inspired by his musical artistry as an integrated intellectual, physical, and spiritual process, Marie Jaëll set her sights on bringing that vision to teachers and students; rejecting the idea that Liszt’s playing was a mysterious or supernatural gift, she determined to bring it into the realm of the rational.

2.4 Turn of the Century Pedagogy

¹⁰³ Wilhelm von Lenz, *The Great Piano Virtuosos of Our Time [1872]*, ed. Philip Reder (London: Kahn & Averill, 1983), 8-9., quoted in Davies, *Romantic Anatomies of Performance*, 171.

¹⁰⁴ Davies, *Romantic Anatomies of Performance*, 171.

¹⁰⁵ Pierce, *Music Study in Germany*, 291.

The influence of some enlightened pianists began to take effect in the second half of the century in Europe and the New World as people observed and documented ease of playing and tonal richness displayed by great pianists.¹⁰⁶ The old traditions were replaced by seemingly “new” approaches to piano playing which incorporated arm-pressure and arm-weight. A few taught an eclectic approach that combined fingers, arms, and body.

William Mason, Elizabeth Caland, Rudolph Breithaupt, Tobias Matthay, and Otto Ortmann were part of an explosion of writing about the physical aspects of piano technique. Mason (1829-1908), an American who studied with Liszt in Germany in the mid-century, returned to America to refine his teaching theories. His *Touch and Technic*, 1899, described his approach that blended finger agility with upper-arm participation. Caland (), who studied with Ludwig Deppe (1828-1890) until his death in 1890 and later with Marie Jaëll, wrote a book about Deppe’s pedagogy, published in 1910. Deppe’s own experience as a pianist and a conductor influenced his belief that the whole arm and body needed to be trained and used. He advocated continuous movement, using circles in order to achieve suppleness and flexibility. He encouraged his students to do hand exercises, resistance training with weights, and hanging.¹⁰⁷

¹⁰⁶ William Mason (1829-1908) an American, observed ease and what he called “a fully devitalized upper arm” in the playing of an Austrian virtuoso and student of Czerny, Leopold de Meyer (1816-1883), who toured America in 1847-48. When Mason travelled to Europe in the early 1850’s where he studied with Dreyschock and later Liszt and Deppe, he was surprised by the lack of awareness of and mention of the upper arm or shoulders among the Germans. He writes in his autobiography that aside from the wrists, “none of my teachers or their pupils...seemed to know anything about the importance of the upper-arm muscles. Gerig, *Famous Pianists*, 237-38.

¹⁰⁷ Roger C. Boardman, "Ludwig Deppe's Piano Teaching," *American Music Teacher* 25, no. 4 (1976), <http://www.jstor.org/stable/43534679>.

Rudolph Breithaupt (1873-1945), a student of the Leipzig Conservatory and later a teacher in Berlin, was one of the main voices of the arm-weight school. After observing Maria Carreno and other virtuosos such as Liszt, Rubinstein, Hofmann, Godowsky, and Schnabel, Breithaupt became enamoured with ideas about arm weight and “shoulder participation.” His publications in 1905, *The Natural Piano Technic*, Volume I and 1907, *School of Weight-Touch*, were a reactionary revolt against the finger school. By placing so much on using the full arm to direct movement without finger activity, however, he gave his students “great problems in velocity, intensity, control, and legato.”¹⁰⁸

The Englishman, Tobias Matthay (1858-1945)¹⁰⁹ was also deeply impressed with what he observed in the playing of Franz Liszt, Hans von Bülow, and Anton Rubinstein in their tours to London in the 1880s. Like Marie Jaëll, he sought to create an integrated, rational approach to piano playing. He used physical principles from Helmholtz about sound, hinges, levers, and force, along with musical principles of listening and sensitive interpretation. Rejecting the German high-finger school, he described the importance of forearm rotation, but he also recommended individual finger action. In his books, written between 1903 and 1923, he emphasized attention, or mental focus, and described different kinds of attention, both inward,

¹⁰⁸ Gerig, *Famous Pianists*, 357.

¹⁰⁹ Tobias Matthay (1858-1945) began his training in composition, but he had piano good teachers at the Royal Academy of Music, influenced by Mendelssohn and Moscheles school. He was appointed assistant professor of piano in 1880 after which he devoted most of his energy to teaching and writing about piano pedagogy. His first major work *The Act of Touch* (1903), was later summarized and revised in abbreviated form as *The Child's First Steps in Pianoforte-Playing* (1912) and *The Nine Steps towards Finger Individualization through Forearm Rotation* (1923).

(including emotion and the musical elements inherent in the composition), as well as outward (attention to the muscular coordination and the resistance at the key, as well as aural elements, heard in the sound.) Like Jaëll, he believed that rational principles or causes of good and bad piano playing could be made plain to everyone with a desire to learn.¹¹⁰ In his writing, he tried to integrate all of the elements involved in playing from conception to execution, including the emotional, intellectual, artistic-judgement and the mechanistic--the art of tone production. His work laid a foundation for other scholarly and scientific examinations of pianism, especially that of Otto Ortmann (1889-1979) in the 1920's.

Ortmann, one of the most important writers on piano technique in English began his study at the Peabody Conservatory, where he later became the director. A recent study on his work describes him as “an accomplished pianist and an avid scientist, [he] was one of the first to consciously and meticulously combine the two fields.” During his time at Peabody, he took courses at John Hopkins University and worked with friends who were anatomists, physiologists and engineers. His lengthy books, *The Physical Basis of Piano Touch and Tone: An experimental investigation of the effect of the player's touch upon the tone of the piano* (1925) and *The Physiological Mechanics of Piano Technique* (1925) give detailed descriptions of piano mechanics and action, combined with the player's body. Ortmann's thorough descriptions of anatomy and physiology go far beyond proper names and diagrams to include discussion about how different ways of moving and playing cause different physiological responses. He created a

¹¹⁰ Gerig, *Famous Pianists*, 394.

laboratory for investigation which included apparatus created by Ortmann himself.¹¹¹ Like Jaëll he was limited by the tools at his disposal in his time;¹¹² and like her, his writings and scholarship did not receive recognition and application in the practical field of pedagogy in his day.

While others were exploring the more physical aspects of pianism, Marie Jaëll was turning her focus inward to understand the relationships between touch and cognition, perception and aesthetics. Jaëll realized that the traditional ways of teaching piano had not been created systematically--ideas about how to play and teach that had been passed down from teacher to student or discovered through trial and error were sometimes conflicting. Her voice was one of the first to call for a new approach.

¹¹¹ For more discussion about his research in the lab see Hans-Christian Jabusch, "Movement analysis in pianists," *Music, Motor Control and the Brain* (2006).

¹¹² Gerig, *Famous Pianists*, 412. In 1967, about forty years after his first publication, Ortmann expressed that he would have saved many hours and headaches earlier in his research, if he had had the scientific equipment that was then available.

CHAPTER 3. THE PEDAGOGY OF MARIE JAËLL

After the death of her friend and mentor, Franz Liszt, in 1886, Jaëll set her sights on a quest, inspired by the great virtuoso, to transform the teaching of piano. Like others of her time, she sensed that current methods of instruction were inadequate. Her correspondence reveals that as early as 1887 she was planning a new method and trying out her ideas on students,¹¹³ While Jaëll's inspiration for a new approach to the teaching of piano began with her observations of Liszt, her approach was enlivened by her extensive reading of science and philosophy.

3.1 Scientific Influences

Late nineteenth-century intellectuals were interested in the mind and the unconscious with a new focus on empiricism.¹¹⁴ Application of the scientific method, including observation, testing and empirical analysis had spread to many fields including medicine, neurology, and psychology. At this time, the emerging fields of physiology, psychology, neurology, and musicology were not distinct, and there was much crossover between areas of research.¹¹⁵ In the early nineteenth-century those who sought to understand the inner workings of the mind

¹¹³ Marie-Laure Ingelaere, "Marie Jaëll Through the eyes of her correspondents," *Marie Jaëll. Musique symphonique, musique pour piano* (Palazetto BruZane, 2016), [http://www.bruzanemediabase.com/eng/Musical-scholarship-on-line/Articles/Ingelaere-Marie-Maire-Marie-Jaell-through-the-eyes-of-her-correspondents/\(offset\)/1.98](http://www.bruzanemediabase.com/eng/Musical-scholarship-on-line/Articles/Ingelaere-Marie-Maire-Marie-Jaell-through-the-eyes-of-her-correspondents/(offset)/1.98), CD-book excerpt.

¹¹⁴ See Weinstein-Reiman, "Printing Piano Pedagogy." for discussion of this context.

¹¹⁵ Amy B. Graziano and Julene K. Johnson, "Music, neurology, and psychology in the nineteenth century," in *Music, neurology, and neuroscience: historical connections and perspectives*, ed. Eckart Altenmüller, Stanley Finger, and François Boller, Progress in Brain Research (Elsevier, 2015), 34.

primarily used internal investigation, and metaphysical, or philosophical approaches. In the latter part of the century, an increased emphasis on the scientific method led to the development of “psycho-physiology.” The deterministic belief that motor-actions stem from predictable physiological processes led scientists to create models based on observable phenomena. Tied up with investigations into the connections between physical and intellectual processes were philosophical questions about morality and the nature of the soul.¹¹⁶

Some influential scientists and thinkers at this time who took an interest in music and aesthetics included Hermann von Helmholtz, Wilhelm Wundt, and Richard Waussman.¹¹⁷ Helmholtz conducted pioneering work on acoustics that included laboratory investigation about the process of sound production on the piano. He considered the exterior, physical processes involved in human vision and audiology and later, the internal, cognitive processes at play in the *perception* of sound. Helmholtz introduced the term *Tonpsychologie* to describe the new field of study of sound perception and the brain.¹¹⁸

Wilhelm Wundt (1830-1920), also a physicist, physician, and early psychologist, linked empirical ways of knowing with theoretical in order to create a system that would appropriately

¹¹⁶ Lorraine J. Daston, "British Responses to Psycho-Physiology, 1860-1900," *Isis* 69, no. 2 (1978): 192, <http://www.jstor.org/stable/230429>. Some intellectuals feared that pursuing a “law-governed mental science” based on natural law would reduce humans to the level of animals, without purpose and choice and would lead to moral and ethical failures.

¹¹⁷ Gerig, *Famous Pianists*, p. 377. *On the Sensations of Tone*, (1862) Hermann von Helmholtz (1821–1894), a German physicist, physician, and physiologist was highly influential in many areas including vision, audition, and perception.

¹¹⁸ Graziano and Johnson, "Music, neurology, and psychology in the nineteenth century," 34.

blend physiology with psychology.¹¹⁹ He believed in the importance of attention and internal will or volition to direct motor processes, rather than following the deterministic belief that actions are a product of purely physical processes.

Some psychologists and musicologists explored the new area of sensory processing from a theoretical and analytical framework, including French psychologist, Theodule Ribot (1839–1916), and German musicologist Richard Wallaschek (1860–1917).¹²⁰ Other psychologists and neurologists sought to understand the association between sensory input--what we hear, see, and feel-- and brain localization, especially in regards to language, and later music.

While scientists at this time were exploring the cognitive processes underlying sensory perception, they were also interested in the physical side of development; and they increasingly employed technology to understand specialized motor processes. Better tools or instruments of

¹¹⁹ Wilhelm Wundt (1830-1920) is considered the founder of experimental psychology and the first to call himself a psychologist. He believed that volition or will was important as well as the processes of attention. He linked empirical ways of knowing with theoretical in order to create a system that would appropriately blend physiology with psychology.

¹²⁰ Richard Wallaschek (1860–1917) wrote extensively about the origins of music, music aesthetics, and music psychology. He studied in both Germany and London until 1896 when he moved to Vienna where he was a music critic and taught musicology at the university for the rest of his career. He distinguished between two types of ways of processing music elements, one more focussed on small details like pitch, intervals or chords, “*tonvorstellung*” and the other more aware of the overarching and complex musical structures, “*musikvorstellung*.” While listeners use both levels, one way of sensing music is usually dominant. Wallaschek agreed with Charcot’s 3 types of processing: auditory, visual, and motor, and that these could be applied in either the *tonvorstellung*, or details level, or the higher functioning, *musikvorstellung*. See Graziano and Johnson, "Music, neurology, and psychology in the nineteenth century." For more discussion about discussion about Wallaschek’s influence and the other scientists at this time.

measurement allowed scientists to collect and document data in areas that had previously been understood only by speculative theories. Art and aesthetics were also included within scientific inquiry, and scientists had a keen interest in the specialized skills of musicians, particularly pianists.¹²¹ Some of the measuring tools that scientists used in empirical studies on pianists at the turn of the twentieth-century included the graphic method, player piano, and chronometer. Scientists sought to quantify movement, speed of response time, loudness, and duration, in an effort to make temporal and auditory phenomena visible. This interest in physical processes and the development of tools to quantify perceivable phenomena corresponded with other technological advances like the player piano and later the phonograph.¹²²

That Jaëll was aware of and deeply interested in these intellectual currents is revealed in her own writings which consider elements of acoustics, aesthetics, perception, anatomy and physiology. She sought to enrich traditional teaching methods with philosophical inquiry and later, empirical research, believing that musicians should seek out scientific knowledge and learn from scientists just as scientists were learning from musicians. She did not shy away from areas outside of her specialty but approached them with insatiable curiosity in order to integrate them with her current experience and then share them.¹²³ In looking to science for answers, she

¹²¹ Kursell, "Visualizing Piano Playing, 1890-1930." In this article, Kursell describes the interest in the pianist's body in experiments between 1890 and 1920. Her article provides rich references for further research about this time as well as describing Jaëll's fingerprinting experiments in context.

¹²² Kursell, "Visualizing Piano Playing, 1890-1930."

¹²³ She reportedly signed up for math classes at the *Sorbonne*. Struber, "Education of Musical Thinking," 43.

stepped outside of the traditional epistemology of piano pedagogy, which had relied on self-discovery, teacher-student mentorship, and expert opinion.

In her approach to the study of piano, she was influenced by Helmholtz as she sought to link external sensations with internal cognitive processes. Her theories employed paradigms from both physiology and psychology with a belief in the importance of attention like Wundt. Later, she collected data and employed measuring devices in the laboratory to support her theories, like Alfred Binet and Jules Courtier.¹²⁴ Jaëll's fascination with the relationship between hearing, touch, and the mind, was shared with the intellectuals of her day. Her ways of understanding and speaking about these new ideas, however, sounded as strange in the ears of the musical establishment as Debussy's new harmonic language.

3.2 Jaëll's Method of Touch

In 1894, Marie Jaëll set forth her goal to transform the teaching of piano with the publication of her first major pedagogical work, *Le Toucher, Nouveaux principes élémentaires pour l'enseignement du piano*.¹²⁵ She opened her new method, The Touch, with quotations from Liszt, Beethoven, and Helmholtz, revealing both her musical lineage and her intellectual

¹²⁴ Kursell, "Visualizing Piano Playing, 1890-1930." Kursell says, "In 1896, psychologists Alfred Binet and Jules Courtier introduced an apparatus to register piano playing. Their article 'Recherches graphiques sur la musique' presented experiments they conducted with the new device at the Paris Laboratory for Psychologie." 68.

¹²⁵ Marie Trautmann Jaëll, *Le toucher. Nouveaux principes élémentaires pour l'enseignement du piano* (Paris: Heugel & Cie., 1894).

influences. Liszt's famous quotation, extolling the virtues of the piano as the greatest of all instruments because of its power to "summarize in itself the entire art of music,"¹²⁶ set the tone for her important undertaking. The idea that the piano has power, not only to transmit the "lights and shadows" of the orchestra, but also "the entire art of music," laid the foundation for her work. She quoted Beethoven's warnings against placing undue importance on finger dexterity at the cost of intelligence and sensitivity....and that the increasing focus on virtuosity "Would end up banishing all truth and all sensitivity from music."¹²⁷ In so doing she placed herself on the side of Beethoven and all those who placed expression and artistry as a guiding force throughout the musical process, not merely to be added at the end. For Jaëll, the musical development and the technique could not be separated at any point in the process.

Her bold assertions about the need for a change in the method of teaching piano have the tone of a manifesto:

The study of the piano must undergo a complete transformation if we want to correct from the start the unevenness of the fingers, the stiffness which seizes even the most flexible hands when attacking the keys, the slowness of the movement of the fingers which prevents the rapid emission of sound... Elementary principles of touch are lacking in piano teaching. They were never formulated with logical deduction.¹²⁸

¹²⁶ Jaëll, *Le toucher. Nouveaux principes*. See Struber, "Education of Musical Thinking," 45. "The piano holds the first rank in the hierarchy of instruments; it is the most widely cultivated one, the most popular of all; it owes this significance and this popularity partly to its power of harmony, which the piano alone possesses, and, due to this power, to its capacity to summarize in itself the entire art of music."

¹²⁷ Jaëll, *Le toucher. Nouveaux principes*, i.

¹²⁸ Jaëll, *Le toucher. Nouveaux principes*, i.

In contrast to previous methods of instruction, hers was to be rational and universal. By so doing, she would open the door of music to all who desire it, “allow[ing] people of little musical culture to acquire balanced and expressive playing.”¹²⁹ Her goal relied on an understanding of three areas: the use of the body, the technology of the instrument, and musical laws. Once the principles were understood, she would explain them so that any student with the will and willingness to work could achieve mastery.

Jaëll identified two problems encountered by pianists: we have ten fingers that do not naturally work well together, because of differing finger lengths and strengths and the opposite orientation of the hands. Traditional methods, utilizing technical exercises of increasing complexity in order to overcome physiological inequalities, actually worsen the problem. Jaëll observed that one can “feel a physical resistance when practicing them. Because of this, these exercises encourage the development of poor physiological habits and produce weak hands.”¹³⁰ Instead, Jaëll believed that pianists would recognize the value of the new way of playing because it would immediately make the playing simpler and more expressive.¹³¹

Inherent in her approach are several ideas that run counter to traditional nineteenth-century piano pedagogy. The first is the importance of integrating science in the study of music. She argued against the Cartesian view that music as an art would be destroyed by analytical

¹²⁹ Jaëll, *Le toucher. Nouveaux principes*, 3.

¹³⁰ Struber, "Education of Musical Thinking," 50.

¹³¹ Jaëll, *Le toucher. Nouveaux principes*, ii.

study.¹³² The second principle of her method follows from the first: if the development of technical and musical mastery can be observed and studied, then superb pianism is within reach of ordinary mortals. “The study of the piano by the application of the touch is not intended especially for those who are gifted or to those who are not; it is addressed to those who are capable of an effort of will.”¹³³ This democratic approach in which anyone with proper mindset and skill development could learn the principles of pianistic success was revolutionary.

The third principle of her method is that the body and mind work together in a reciprocal relationship; therefore, conscious attention is necessary for the attainment of technical mastery. In her theory, the conscious mind takes over to correct the unconsciously formed habits of movement. This intentional focus becomes an “effort of will,” like the volition described by Wundt, and is fundamental to the development of control and independence, or freedom of the fingers. Control of the hand must begin in the mind and develop in combination with an awareness of the sensation at the tips of the fingers, combined with a deep listening. Proper training would involve the coordination of movement, awareness and sensory perception. Believing that mindless repetition of exercises would only breed bad habits and lack of control, her view was that practice should be done with focussed attention of the highest degree.

¹³² The tuba player and teacher, Karen Bulmer, founder of the podcast “Music, Mind and Movement,” often talked in her first year of podcasts (2017-18) about the idea of “paralysis by analysis.” She tried to debunk this notion, held by many musicians, that delving too deeply into the mechanics of playing the instrument would destroy musical artistry and spontaneity. See also the quotation by Ernest Bacon from 1963: “In aiming to enlighten, too much mechanical self-knowledge mostly confuses. Piano playing will never be a science. If it were, it would cease to be an art.” Gerig, *Famous Pianists*, 5.

¹³³ Jaëll, *Le toucher. Nouveaux principes*, i.

The fourth principle of Jaëll's method of touch is the importance of continuous movement, especially circular movement. This directly addresses a fundamental challenge in piano technique--how to move quickly from one note to the next within the body's limited response time. Jaëll believed that contemporaneous piano methods waste time and energy stopping and starting each note with separate downward and upward motions. Her solution was twofold: keep the movement continuous and also keep a sense of tension or "fixity" in the musculature. She asked the student to land on the middle of the key using the weight of the hand and then slide the finger in a subtle pulling motion back toward the body as the key is released. She called these *slidings (glissés)*,-- "the upward return of the key accomplished by a pull: a gradual rise that contributes to the fading away of the sound."¹³⁴ In the playing of single notes, or during rests, the pianist's movement on the key away from the fallboard would have a corresponding curved movement in the air, returning the hand to its starting position for the next note. These she called *curves (courbes)*.

Marie Troost, a student of Jaëll's student Jeanne van's Gravemoer, explained more clearly how the sliding motions work:

Instead of keeping the hand immobile in the same place, it is moved in the direction of the length of the keys so as to graduate the successive 'slidings' effected by the fingers. The continuous movement of the hand binds, during its travel over the keys, the different tones of a group or of an entire phrase, which unites the finger movements...the linking of several tones that form a group must be insured by a movement of the hand

¹³⁴Jaëll, *Le toucher. Nouveaux principes*, 14. Quoted in Bertrand Ott, *Lisztian Keyboard Energy/Liszt et la pédagogie du piano*, trans. Donald H. Windham (New York: Edwin Mellin Press, 1992), 42.

distributing over the keys the ‘slidings’ of the fingers corresponding to the various tones to be connected.¹³⁵

She believed that a constant state of tension or “fixity” (what we would today call activation), is necessary to provide support for the fingers. She reasoned that “Each time we try to intensify our perceptions, we contract our muscles,” as when we fix our gaze. This state of muscular readiness, opposite to relaxation “is therefore necessary during practice because it both intensifies sensation and allows us to better isolate movements, thus acquiring the indispensable independence of the fingers.”¹³⁶

For Jaëll, the aural and mental correlation with the movement was more important than the physical movement itself, with the movement of the finger actually training the inner perception. “After having sounded the note, is it not absolutely necessary that [the student] follow it of his conscious will, so as to somehow hear it continue singing within him, awakening the intimate echo of his musical thought?”¹³⁷ She suggested that the best way to keep the student hearing the note internally is to keep the finger moving “as long as the note should ring in his ear.” Short attacks that focus only on the point of hitting the key, not only “do not train touch, but they prevent the student from thinking about the duration of the sound and therefore to the sequence of notes, from which derives THE VERY SPIRIT OF THE MUSIC.”¹³⁸ Her ideas

¹³⁵ Marie W. Troost et al., *Art et maîtrise des mouvements pianistiques. Préface d'Eduardo del Pueyo* (Paris: Presses universitaires de France, 1951), 30-31., quoted in Ott, *Lisztian Keyboard Energy*, 74.

¹³⁶ Kiener, *Marie Jaëll*, 125.

¹³⁷ Jaëll, *Le toucher. Nouveaux principes*, 3.

¹³⁸ Jaëll, *Le toucher. Nouveaux principes*, 3. Capitalization in original.

about circles and inner hearing come directly from Liszt; ease and economy of movement are hallmarks of Lisztian “keyboard energy.”¹³⁹ Her method runs directly contrary to the training methods put forward by the Stuttgart school of piano playing which included of the upward/downward keystroke and mindless drilling of exercises.

It was no coincidence that Jaëll called her method “*le toucher*,” or “the touch.” The terminology surrounding touch goes back to the roots of French keyboard playing with Couperin’s *L’Art de Toucher le Clavecin. The Art of Playing the Harpsichord*.¹⁴⁰ Rameau, Kalkbrenner, Saint-Saëns, Liszt, and many others referred to the importance and power of touch to impart nuance, expression, and beauty.¹⁴¹ For Jaëll, touch was paramount to the act of creation at the piano. On a physical level, touch represented the point of connection between the artist, her instrument, and the audience--each moment of touch creating a sonority that would carry to the listener. The touch was also the point of connection between the thought, or intention, and the movement of the body towards the physical production of sound. This relationship was bi-directional. Thought and intention *direct* movement, which creates sound. In her view, conscious awareness of sensation would lead to an improved ability to control movement, which in turn

¹³⁹ Ott, *Lisztian Keyboard Energy*.

¹⁴⁰ Kursell, "Visualizing Piano Playing, 1890-1930," 80.

¹⁴¹ Weinstein-Reiman, "Printing Piano Pedagogy," 2. Weinstein-Reiman points out the connection between Jaëll’s conception of touch and other antecedents.

would influence thought through the pathways from finger to brain. The three elements continually act upon each other in a reciprocal relationship.

In Jaëll's second book, *La musique et la psychophysiologie*, published in 1896, she directed her writing towards a broader audience.¹⁴² She wrote to her friend Gosswine, "I have discovered movements that will potentially allow me to help everyone to realize beauty through the piano."¹⁴³ "Psychophysiologie" dealt with the interaction between two spheres of knowledge, the physical and the intellectual. Jaëll branched out into larger questions about music, touch and cognition and delved into philosophy. She believed that her ideas about how to unite music and thought could be applicable to any instrument. Struber described it as "simultaneously a cumulative summary of Jaëll's years of observations and internal interrogations as a pianist, and a starting point for future experiences regarding the interaction between the tryptic sound-hand-thought."¹⁴⁴

In this work, Jaëll further developed the fundamental principles of musical learning that she had put forth in *Le toucher*. She argued against the popular notion that "the greatness and the mysterious quality of art lies in the fact that its essence cannot be communicated, it must be carried within oneself."¹⁴⁵ On the contrary, art can be taught. But even that is not sufficient. For

¹⁴² Marie Jaëll, *La musique et la psychophysiologie* (Paris: F. Alcan, 1896).

¹⁴³ Kiener, *Marie Jaëll*, 70., quoted in Struber, "Education of Musical Thinking," 56.

¹⁴⁴ Struber, "Education of Musical Thinking," 58.

¹⁴⁵ Jaëll, *La Musique et la Psychophysiologie*. 3, quoted in Struber, 60.

Jaëll the purpose of musical training was not merely to develop skills such as to read music, to develop memory, or to play a piano piece well, “one must, before one is able to truly do one of these things well, learn to think the notes.”¹⁴⁶ Since true musical intelligence is more than the acquisition of separate skills, it requires the necessity of concentration and attention. In these ideas she attempts to debunk the mechanistic views described in chapter 2 and to create a new way of considering musical creation. Jaëll’s thoughts about the importance of conscious attention came directly from Liszt.

Jaëll’s conception of the relationship between composer and musician, and between performer and listener, parallels that held by Liszt.

To take the tonal energy of the piano and draw it to oneself, to make it pass through oneself before transmitting it to those who are listening is to feel that the music has its incarnation in a human being and not in a cold instrumental mechanism. The interpreter then becomes an intermediary between the source of sound and the listener.¹⁴⁷

This relationship is influenced by the physical mechanism as well as the mindset of the player. Pushing or pressing the keys creates a performance style of “thrusting the sound of the piano toward the public, without being imbued with the musical energy.”¹⁴⁸ On the other hand, when the touch at the keyboard is a “harmonious pulling gesture,” like an archer drawing an

¹⁴⁶ Jaëll, *La Musique et la Psychophysiologie*, 159, quoted in Weinstein-Reiman, "Printing Piano Pedagogy," 4. Jaëll articulated the importance of thinking the music almost a decade before the French musicologist Combarieu explained music as “the art of thinking with sound.” “*Tart de penser avec des sons.*” Michel Duchesneau, "French Musicology and the Musical Press (1900-14): The Case of La revue musicale, Le mercure musical and La revue musicale SIM," *Journal of the Royal Musical Association* 140, no. 2 (2015), <https://doi.org/10.1080/02690403.2015.1075807>.

¹⁴⁷ Ott, *Lisztian Keyboard Energy*, 150.

¹⁴⁸ Ott, *Lisztian Keyboard Energy*, 151.

arrow or the violinist drawing his bow, the audience is drawn into the circle. Jaëll's *glissés* integrated this pulling gesture, part of a psychophysiological model that integrated the mind and body in a parallel and mutually informing process.

Jaëll believed in the importance of studying works of great musical value as one of her guiding principles. In *la Musique et la Psychophysiologie* she explained the value of each composer that she included in her method: Bach, Schumann, Liszt, Beethoven, Mendelssohn, Schubert. She believed that the composer was also part of the interactive circle of communication between artist, instrument and audience. His unique voice had power to create a response in the listener as well as a change in the thought processes and feelings of the pianist.¹⁴⁹ “The musical language that everyone seems to understand is a sympathetic connection that makes human beings feel a sense of belonging to a community of origin, a shared ideal, an ability to be moved by the same attractions.”¹⁵⁰ This ideal speaks directly to the late nineteenth-century conception of the prophet-poet shared by Liszt, Saint-Saëns, and others, who saw music as a great ennobling and unifying force for humanity.¹⁵¹

3.3 Collaboration with Charles Féré

¹⁴⁹ Struber, "Education of Musical Thinking," 68-69.

¹⁵⁰ Struber, "Education of Musical Thinking," 73.

¹⁵¹ Michael Strasser, "Providing direction for French music: Saint-Saëns and the Société Nationale," in *Collected Work: Camille Saint-Saëns and his world*, Bard Music Festival (Princeton: Princeton University Press, 2012). Compare Ellis, "Liszt: the Romantic artist," 10-12.

Following the publication of her second book, Jaëll attracted the attention of Dr Charles Féré, medical superintendent of the psychiatric clinic at Bicêtre, near Paris, who was interested in her thoughts about touch and the hand. Their collaboration marked a turning point in the development of her theories.¹⁵² Féré's extensive writing and research focused on fingerprints and the anatomy of the hand as well as many other subjects including neurology, criminality, psychiatry, Darwinism, hypnosis and heredity. He was interested in whether fingerprints and prehension, the way a person grasps objects with their hand, could provide insight into personality and higher cognitive development. Féré invited Jaëll to share his laboratory space and use his equipment to perform experiments.

Jaëll was eager to test her theory that the very sensitive finger pads, with their unique "papillary lines" were fundamental to developing touch and its connection to the brain. In her collaboration with Féré, Jaëll sought to measure and create physical evidence of the effectiveness of her method of training the touch. She kept notebooks and journals of her observations and collected data using herself and her students as subjects in order to measure differences in tactile sensitivity and speed response. One of her experiments used inkblots and pieces of cardboard or paper attached to each key to record finger placement. The pianist (Jaëll or a student) would press her hand against an ink pad and then play a chord or set of notes several times. Jaëll (or Féré) would notate the quality of the sound and compare the quality of the ink impressions. The pieces of cardboard (and later, "piano paper") were then removed from the keyboard and affixed

¹⁵² Struber, "Education of Musical Thinking," 74.

to notebooks or on diagrams of the keyboard. The fingerprints represented a measurable point of connection between the physical movements and the unseen mental processes, between the initiation of thought and the moment of contact with the key.¹⁵³

Helmholtz said that noise was unorganized sound, while music was organized sound.¹⁵⁴ Jaëll believed that this organization was visible as well as audible. She noticed that experienced pianists moved their fingers and hands in a more organized way on the keyboard and that this organization produced better sound. She observed that accomplished pianists made a stronger fingerprint and were more consistent in their placement on the keys. (figure1) Jaëll commented that these prints ‘correspond to vivid and coordinated tactile sensations: the balance of the position of the fingers is such that all effort disappears even in the execution of the greatest difficulties. In summary, it is when the digital lines of the five fingers present a homogeneous orientation that there is harmonization of touch, that is to say coordination of the pressures transmitted by the different fingers; and, it is then only also that the difficulties of the mechanism disappear.’¹⁵⁵

¹⁵³ Weinstein-Reiman, "Printing Piano Pedagogy," 16. "Similar to fingerings, fingerprints provided insight into music as a temporal, aesthetic and corporeal phenomenon. However, unique to Jaëll's use of fingerprints is the notion that, inherent in the coordinates were the haptic and sonic data of performance."

¹⁵⁴ Jaëll, *Le Toucher, Nouveaux principes*, (1894) ii.

¹⁵⁵ Marie Jaëll, *Le toucher. Enseignement du piano basé sur la physiologie*, 3 vols. (Paris: Costallat & Cie., 1899), 7.

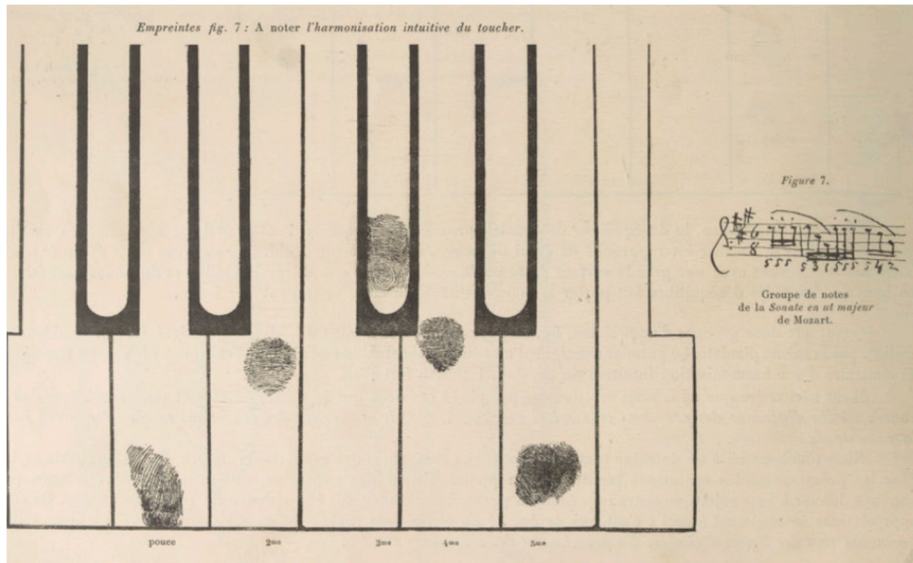


FIGURE 1: FINGERPRINTS OF A STUDENT TRAINED IN THE TOUCH METHOD. MARIE JAËLL. LE TOUCHER. ENSEIGNEMENT DU PIANO BASÉ SUR LA PHYSIOLOGIE VOL. I, 6. SOURCE : GALLICA.BNF.FR./BNF.

She also saw that students improved the quality of their fingerprints and the resonance or tone of their playing as they trained in her method. Figure 2 shows the fingerprints of a student “trained in the usual method,” playing an excerpt from Saint-Saëns’ *Air Varié*; Figure 3, shows fingerprints of the same student after six months of study in Jaëll’s method of touch, playing a different excerpt. The change in the pressure and consistency between the two samples is readily apparent.

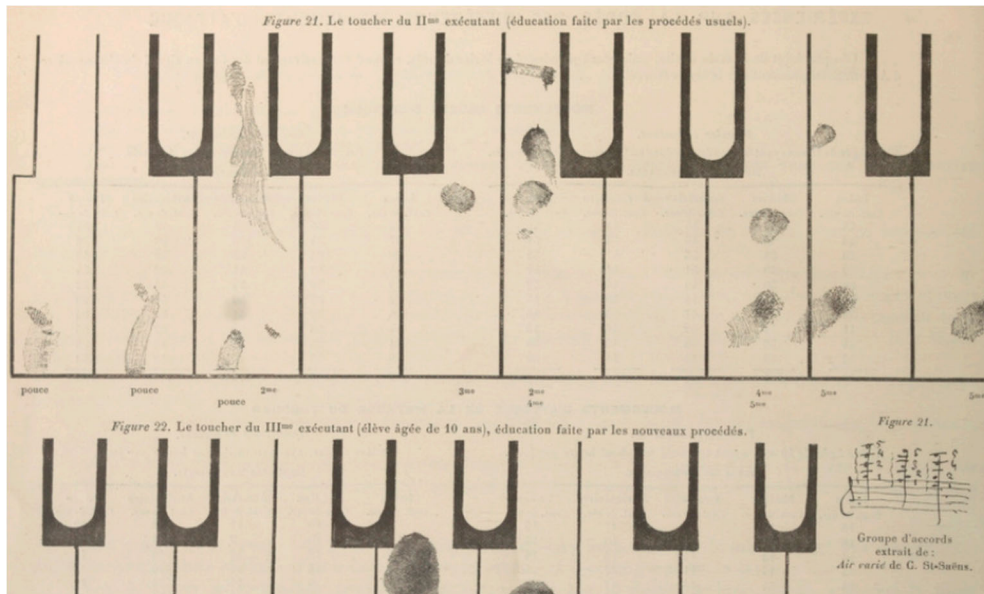


FIGURE 2: THE TOUCH OF A STUDENT TRAINED IN THE USUAL METHOD, PLAYING AN EXCERPT FROM SAINT-SAËNS' *AIR VARIÉ*. MARIE JAËLL. LE TOUCHER. ENSEIGNEMENT DU PIANO BASÉ SUR LA PHYSIOLOGIE VOL. I, 6. SOURCE: GALICA.BNF.FR./BNF.

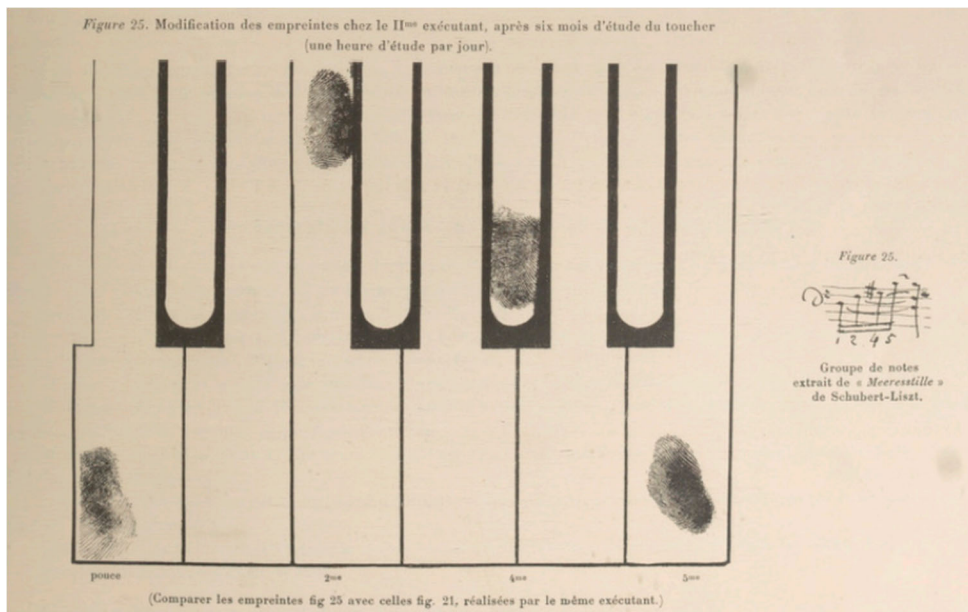


FIGURE 3: THE SAME STUDENT AFTER 6 MONTHS OF STUDY FOR ONE HOUR PER DAY IN THE TOUCH METHOD. MARIE JAËLL. LE TOUCHER. ENSEIGNEMENT DU PIANO BASÉ SUR LA PHYSIOLOGIE VOL. I, 6. SOURCE: GALICA.BNF.FR./BNF.

Jaëll's observations led her to further inquiry into the importance of finger placement on the keys, and confirmed her belief in the importance of developing sensitivity in the fingertips as a kind of specialized awareness. She believed that the sensation at the fingertips would guide the whole mechanism through the hand, arm, and shoulder. Combining touch with mental focus would lead to a unity of thought, movement, and listening that could be perfected through the observations and sensations of the pianist in a kind of visual, aural, and sensory feedback loop.¹⁵⁶

Another set of experiments that she conducted with Féré measured speed of attack in response to a sound. She and Féré used a chronometer to measure reaction time to one hundredths of a second. In trials that timed the execution of ten repeated notes she discovered that traditionally trained pianists had poorer reaction times than non-pianist subjects. Those trained in her method performed significantly faster.¹⁵⁷

While Jaëll believed in the importance of empirical testing, her methods did not always live up to her ideals with respect to scientific rigor. Close examination reveals problems in the design of her experiments as well as in her analysis of the results.¹⁵⁸

3.4 Le Toucher. Enseignement du piano basé sur la physiologie (1899)

¹⁵⁶ Jaëll, *Le toucher* (1899).Vol.I, 7.

¹⁵⁷ Jaëll, *Le toucher* (1899), 2.

¹⁵⁸ Weinstein-Reiman, "Printing Piano Pedagogy," 17-20.

She revised her method of touch in 1899 to include her scientific data in a new edition of *Le Toucher. Enseignement du piano basé sur la physiologie*, *The Touch: piano teaching based on physiology*.¹⁵⁹ At first glance, the method seems to follow the traditional format of a piano training manual. It is in three volumes, organized progressively, with exercises, repertoire pieces, and accompanying instructions for the student. She gives suggestions for managing a student's practice time and how to sit at the piano. But the method is clearly not like previous methods in other ways. Before the introduction of the first exercise are 29 pages of graphs, diagrams, tables and figures, in which Jaëll presents concrete evidence that her method produces different results than traditional training. She includes diagrams with explanations of the anatomy of the hands and fingers, arms and shoulders (Figure 4). She describes her fingerprint experiments that revealed the importance of papillary lines and organized movement, and she puts forward her research about reaction time, in which she and Féré use an Arsoval chronometer to measure speed of attack in one hundredths of a second.

Volume 1, along with her scientific reasoning and evidence, contains the technical foundation of her method — eighty-six simple exercises to be practiced slowly and with great mental concentration. She includes exercises to be performed at the keyboard and as well as preparatory finger gymnastics to be performed away from the keyboard. She includes diagrams of hand positions and movement patterns. The exercises begin with the thumb, then add one finger at a time, progressing in complexity only after the first are mastered.

¹⁵⁹ Jaëll, *Le toucher* (1899).

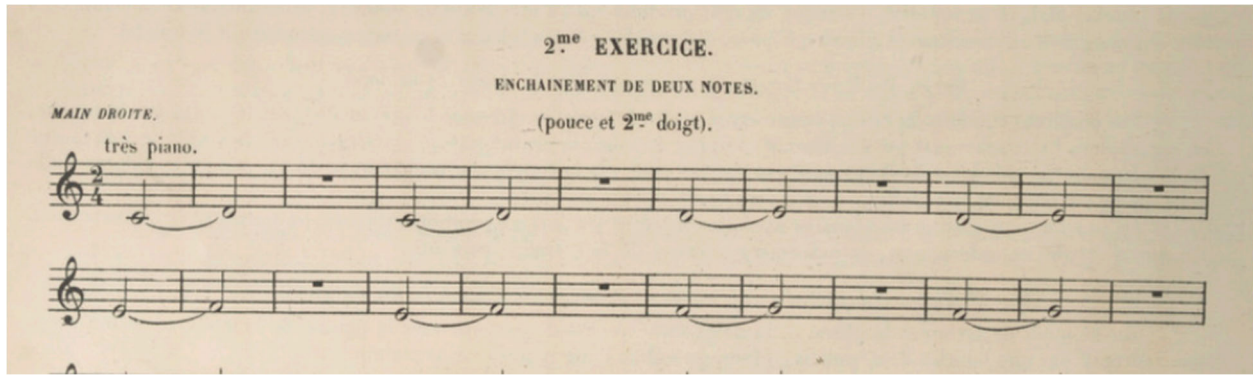


FIGURE 4: EXERCISE 2 FOR THE THUMB AND SECOND FINGER. MARIE JAËLL. LE TOUCHER. ENSEIGNEMENT DU PIANO BASÉ SUR LA PHYSIOLOGIE VOL. I, 30. SOURCE: GALLICA.BNF.FR./BNF.

After the first 36 exercises, which are all to be played “*lentement et piano*,” Jaëll adds dynamic gradations from *pp* to *fff* and playing with the thumb held down. She introduces other technical exercises in a progressive fashion, beginning with ascending scales for each hand. In the execution, the student is to play slowly, giving each note equal emphasis with no accents, in order to develop strict control and independence. She instructs the student to count aloud in eighth-note subdivisions throughout.

The types of exercises Jaëll included-- scales, repeated notes, chords of thirds and triads, arpeggios, and octaves --do not stray far from traditional nineteenth-century exercises. The purpose of these exercises, however is very different from traditional mechanistic five-finger exercises. The student is to develop first the touch sensitivity in the fingertips and then independence of each finger. Only then can the hands and fingers work in a coordinated fashion. Her emphasis on tactile sensitivity, an almost hyperawareness of the feeling of the touch, was clearly antithetical to the education she was familiar with-- she aimed to train the mind of the student. This is apparent in the simplicity of the exercises and focus on touch awareness, as well as the directive to play softly so that the volume will not overwhelm the touch sensation. Her use of circle motions with diagrams of the hand and wrist is innovative.

Jaëll's instructions regarding the position of the hands and fingers during several phases of the attack--before, during and after playing a note--emphasize the importance of keeping the wrist and hands flexible and supple. Her advice is to use arms and hands to move into position, using curved motions, and begin to play only when the fingertip is in contact with the keys. Guichard summarizes Jaëll's views that dynamic control is "best achieved with the fingers alone."¹⁶⁰ This view of the relationship between hand, fingers, arm and wrist sounds very Lisztian and similar to the training she would have received from her teachers, Herz and Moscheles. She blends this with the concept of elasticity taken from Liszt. "If we lower the finger without having at the same time the feeling of an opposite force, the weight transmitted from the key will be a dead weight, with no counterbalance. But, if instead, in lowering the key, one feels simultaneously an upward attraction, the movement actually executed will become elastic, winged."¹⁶¹

Volume 2 of Jaëll's new method introduces repertoire along with practical guidelines about how to practice. Her seven principles include instructing the student to sit low during practice, with the elbow lower than the arm, in order to isolate not only the movement, but the attention on the fingertips. Later, during the performance phase, the student would sit with elbows at the height of the keyboard. The second principle was learning should begin at a very slow pace; each eighth- and sixteenth-note should be subdivided into two and counted aloud so it

¹⁶⁰ Guichard, *Marie Jaëll the Magic Touch, Piano Music by Mind Training*, 158.

¹⁶¹ Kiener, *Marie Jaëll*, 131.

would be learned right the first time. Contrary to the previous dogma about hours of practice, Jaëll believed in shorter practice sessions to allow for maximum concentration, suited to the age and ability of the student. This might range from a half-hour to two hours per day, with breaks as needed. “It is therefore necessary to close the piano if the link between brain and fingers cease to establish themselves, or if the student's will power is not sufficient to allow him to concentrate all his thought on correcting touch.”¹⁶² Another principle that differed from the pedagogy of her time, was Jaëll’s insistence that the student play everything at a *piano* volume while learning so that the sensitivity at the fingertips could be developed before progressing to louder dynamics. She reasoned that accents and dynamics mask irregular movements that lead to unbalanced sonorities.

Other principles of her method point towards a holistic and artistic view of musical learning. Jaëll disapproved of cutting up pieces into sections to work on more difficult passages or to correct errors, a practice style that she believed would destroy the sense of the musical work, “as if music were a body without a soul.”¹⁶³ Her suggestion to approach learning a piece as a whole runs contrary to the mechanistic view that music was the sum of its component parts.

¹⁶² Jaëll, *Le toucher* (1899)., Vol. I, 7.

¹⁶³ In her first version of *Le toucher*, Jaëll quoted instructions that Beethoven gave to Czerny, “I beg you to teach him how to play every note in measure, and only when he no longer makes mistakes and possesses the correct dexterity should you give him necessary guidance regarding interpretation. Henceforth, please stop interrupting him to make observations about minor mistakes, which it would be preferable not to mention until the end of the piece. Even though I have taught very little, I have always followed this method; it trains musicians, which is in sum the essential goal of the art, and it is less fatiguing to both the teacher and the student.” Jaëll, Marie. *Le Toucher, Nouveaux principes elementaires pour l'enseignement du piano*. (1894), quoted in Struber, 51-52.

Since it may seem impractical, she allows that the student may learn one line or one page at a time in the early stages of a new piece. Jaëll also emphasized the importance of studying works of real musical value. She says, “The teaching of touch would lose its true significance if it were applied to the study of works of no musical value. In the pieces usually chosen for children, the rules issued in the new method would not find an application...” As the student learns the language of the music through the works of great composers, “The composer will be, through his work, the true master teacher.”¹⁶⁴ This idea echoes those put forth by Robert Schumann that musical learning is a process of growth in which the composer’s score and the student interact throughout the process.

After the introductory principles of study in Volume 2, Jaëll presents musical works chosen to develop the musical sensitivity in collaboration with the touch. Each piece is preceded by brief instructions for study and performance including which exercises are prerequisite or corequisite. In the notes for each piece, she discusses musical considerations such as phrasing, voicing, touch, rests, and position at the keyboard, and later, pedalling. An interesting part of her method is her inclusion of diagrams of the keyboard to be used by the student *before* playing on the keyboard. For each work she includes a schematic of the keyboard with dotted lines and arrows placed on the keys, showing the finger placement but also the length and direction of the slides to be executed for the starting notes. (See Figure 6) The student is to practice the slides on paper before attempting to play on the piano. The dotted lines represent the location of the attack

¹⁶⁴ Jaëll, *Le toucher* (1899)., Vol II, 4.

and the dimensions of the slide to be used during the *study* of the piece. The lines with arrows represent the same movements for the *execution* of the piece in performance.

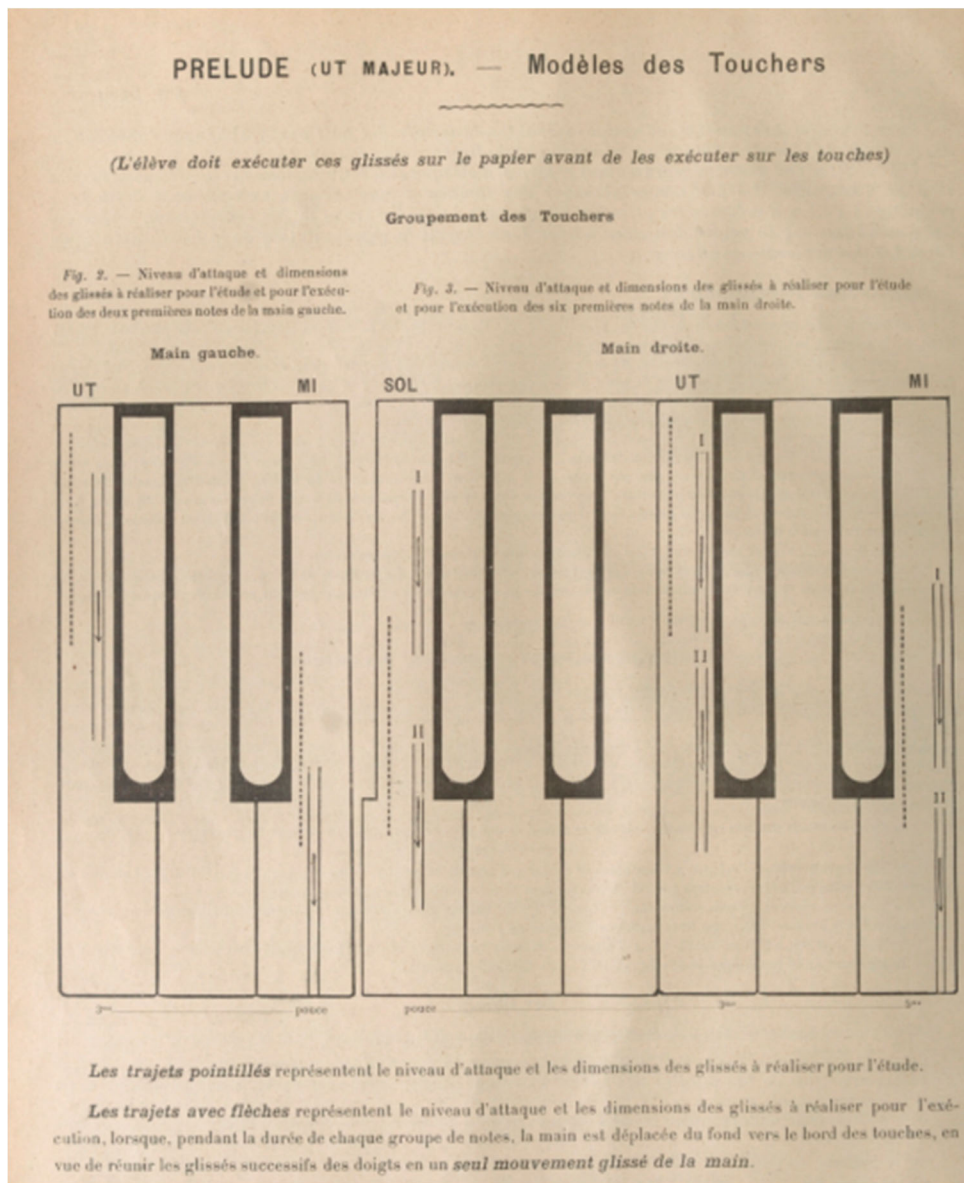


FIGURE 5: THE MODEL OF THE TOUCH FOR J.S. BACH'S PRELUDE IN C MAJOR BWV 846.
 MARIE JAËLL. LE TOUCHER. ENSEIGNEMENT DU PIANO BASÉ SUR LA PHYSIOLOGIE VOL. II, 6. SOURCE
 GALlica.BNF.FR./BNF.

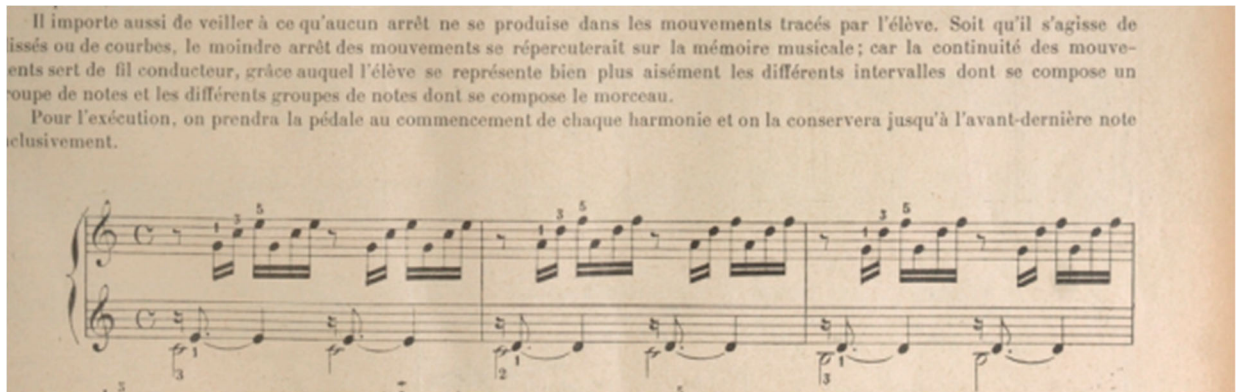


FIGURE 6: J.S. BACH'S PRELUDE IN C MAJOR BWV 846. MARIE JAËLL. LE TOUCHER. ENSEIGNEMENT DU PIANO BASÉ SUR LA PHYSIOLOGIE VOL. II, 7. SOURCE GALlica.BNF.FR./BNF.

Her first work for study is J.S. Bach's Prelude in C major from the *Well-Tempered Clavier*, BWV 846. Her instructions are similar to those for others in the volume. She asks the student to begin slowly, subdividing each beat into eight, rather than the four sixteenth notes as written. The student may also count aloud quietly "ONE-TWO" for each sixteenth note in the measure. The purpose of this slow study is to develop independence in the attack of each note and the feeling of the slide. She writes for this as in other pieces: "Strong muscle tension is required throughout the duration of the study." This tension is not to be felt as stiffness but rather as a sense of readiness and activation. She recommends learning line by line, with hands separately at first. The teacher may play one hand, and for those students not yet able to read notes, this learning will be partially by rote until they learn the notes.

The other pieces in this volume include six Preludes from J.S. Bach's *Well-Tempered Clavier*, Book I, as well as elementary compositions by Robert Schumann, two preludes and

etudes by Chopin, Songs without words by Mendelssohn, and several works of Franz Liszt.¹⁶⁵ Her choice of repertoire is interesting because these pieces demand much of a beginner. The student progresses from simple exercises right on to the masterworks themselves. Her omission of etudes, studies, and sonatinas by the early pianoforte composers such as Hummel, Cramer, Clementi, Czerny, and Moscheles that had been standard teaching fare in the nineteenth century is significant. Her 1899 version of *Le toucher*, has even fewer pieces of elementary difficulty than the 1894 version, because she exchanged many of Robert Schumann's easier works for more advanced works in this edition. She included works by the nineteenth-century masters, principally German, that she valued and performed personally-- the music that was her great inspiration.¹⁶⁶ Her choice of repertoire more closely resembles a twentieth-century music conservatory syllabus than a nineteenth-century tutor.

Volume 3 is written for the advanced student with greater emphasis on the development of touch in relation to rhythm, timbre, and nuance. Similar in organization to the other volumes, it includes more of her scientific theories, as well as exercises and repertoire. The exercises

¹⁶⁵ See Appendix A, for a list of the specific works included in her 1899 edition. For the list in the original (1894) edition see Struber, p. 52.

¹⁶⁶ German nationalism is mentioned by Citron in her 2000 introduction to *Gender and the Musical Canon*. Citron, *Gender and the Musical Canon*. as well as in Michael Strasser, "The Société Nationale and Its Adversaries: The Musical Politics of L'Invasion germanique in the 1870s," *19th century music* 24, no. 3 (2001). Jaëll's choices are similar to the repertoire choices of Clara Schumann, with the addition of Franz Liszt, whom Clara did not admire. Louise and Aristide Farrenc's anthology of piano music, *Le Trésor*, published between 1861 and 1872 had a definite bias towards German masters, and exerted an influence on notions of canon and repertoire. Farrenc, *Le trésor des pianistes; collection des oeuvres choisies des maitres de tous les pays et de toutes le époques depuis le XVIe siècle jusqu'a la moitié du XIXe . Recueillies et transcrites en notation moderne par Aristide Farrenc avec le concours de Louise Farrenc*

include repeated notes, staccatos, and complex rhythms. The repertoire includes more advanced works by Schumann as well as several Preludes by Bach, Preludes and Etudes by Chopin, and several pieces by Jaëll herself, previously published.¹⁶⁷ Jaëll reminds the reader about the importance of *glissés*, comparing the sliding of the fingers on the keys to the ability of a skater to move effortlessly on ice. According to Jaëll, when the student becomes conscious of his movements, he will be able to simplify his study and reduce his hours of practice as well as to put most of his effort on making the piano expressive and acquiring musical playing.

In both volumes 1 and 3 of her method, Jaëll includes some awareness and coordination exercises to be done *sans clavier*, away from the keyboard. She calls these “Exercises for the Phalanges,” and recommends that they be done for 5 minutes each half hour of practice. She also shares more about her personal experience of developing tactile connection and motor coordination. These include rolling marbles in circles on a table, observing that fingers with more tactile sensitivity (the first and second fingers) could make smaller circles, while less sensitive fingers (fingers four and five) produced larger circles. She developed and documented the progress in her handwriting between left and right hand as her coordination and differentiation improved. She even saw changes in the suppleness and flexibility of her hand from the hand exercises she practiced and taught.

Because Jaëll’s theories spanned so many different areas of inquiry and she was so exhaustive in her attempts to detail the learning process, it is difficult to condense her ideas. She

¹⁶⁷ Appendix A

drew from four major influences: traditional pedagogy, her observations of Franz Liszt, her own deep observations of her experience at the piano, and the rich scientific and philosophical thinking of her day.

Whether intentionally or not, Marie Jaëll clearly adopted some ideas and traditional training methods of the nineteenth century. She taught in a private setting with individual students and had a studio or class of private students who performed regularly. Her method itself is very similar in format and content to traditional didactic works of the nineteenth century. It contains directions about how to sit and move at the instrument, progressive exercises with instructions, and a collection of repertoire for study. Her fingerings are similar to those suggested by Hummel and Liszt and differ little from modern editors who follow nineteenth-century practice. In her attempt to transform the teaching of piano, she worked within established modes of transmission, specifically, the manual or tutor of the nineteenth-century.

Her ideas about how to sit and move at the piano came from a unique integration of aspects of each of her major influences, especially Liszt and scientific reasoning. In her method, she detailed the posture and biomechanics of the player, including seat height, distance from the keyboard, and the desired angle of the hand in study or performance. Her observations of Liszt's ease and continuous movement using circles was foundational to her views about *glisés*, or sliding along the key. "She observed the movement of Liszt's fingers better than anyone else and chose for these movements very accurate and synthesizing terms...even though she confused

ease of playing with epidermal sensibility.¹⁶⁸ Her ideas about the arm holding up or carrying the hand in order to feel a reactionary rebounding effect were also part of Liszt's teachings, what Bertrand Ott called "suspensive lightness."¹⁶⁹ She believed that the pianist should angle the hand slightly toward the thumb, as some observed Liszt to do. This idea was, in her view, corroborated by science. Since she believed that the areas of the fingertips on the thumb side had greater sensitivity and therefore greater connection to the brain, playing on this part of the finger would yield greater power for nuance and expression. Her emphasis on the importance of the sensitivity of the fingertips which came from Charles Féré's theories, and were corroborated by her laboratory experiments with her students, were at the heart of many of her other suggestions. These include the instructions to sit lower in rehearsal so that the attention could be directed to the fingertips. This was contrary to the accepted practice. Early pianoforte players suggested that the elbow should be even with the piano; Liszt and others recommended sitting higher as the piano action grew heavier, in order to maximize the force from above the keyboard.

The important role of attention in her theory deserves emphasis because it was so foundational to her conception of learning. Her belief in the power of attention or apperception to direct thought allowed an "active ego or soul" to play a role in the formation of motor activity and influence the brain's response to stimuli was one of the themes of psycho-physiologists that she followed, including Wundt.

¹⁶⁸ Ott, *Lisztian Keyboard Energy*, 38. By sensibility, Ott means "sensitivity."

¹⁶⁹ Ott, *Lisztian Keyboard Energy*, 40.

Francois Maine de Biran, the early-nineteenth-century French philosopher, had differentiated between two types of attention, voluntary and involuntary. It is through the voluntary and selective mustering of attention to a particular mental presentation, in preference to the myriad of other available presentations, that we exercise free will, according to Maine de Biran...the spontaneous focusing of attention on a restricted area of the field of consciousness.¹⁷⁰

In Jaëll's view, the pianist was subject to both voluntary movements and involuntary movements.¹⁷¹ The latter, such as the movement of one finger when another was moving, happened most often during fast playing. Once the motion was begun, unconscious physical habits would take over. She emphasized that in early practice, each attack should be performed at half speed and with precise inner hearing. "The defect of movement must be corrected in thought before it is corrected in the action of the finger."¹⁷² She believed that slow practice, combined with the finger gymnastics she outlined to be practiced away from the keyboard, would reduce the effect of involuntary movement. In contrast, the motions of sliding, curves, and rotation of the forearms were considered to be under voluntary control. She believed that focussing mental attention or concentration, would lead to changes in the mind as well as in the body, an early understanding of the role of attention in neuroplastic change. Her emphasis on focussed attention, the mind, and its relationship to memory, motor control and expression were based on an integrated model of cognition and motor learning that were ahead of her time.

¹⁷⁰ Daston, "British Responses to Psycho-Physiology, 1860-1900," 202-03.

¹⁷¹ Jaëll, *Le toucher* (1899), 13-14.

¹⁷² Jaëll, *Le toucher* (1899), 13.



/ Bibliothèque nationale et universitaire de Strasbourg

FIGURE 7: MARIE JAËLL DEMONSTRATING FINGER EXERCISES. PHOTOGRAPH BY MARIE KIENER, SOURCE: GALLICA.BNF.FR./BNF

Jaëll worked in the lab for ten years, until Féré's death in 1907. She summarized their important relationship:

From 1897 to 1907 Dr Féré communicated all his research to me, as I communicated mine to him... We have made repeated [finger]prints of the same chord. He compared the touches made by each finger and informed me, 'They are similar; therefore, it is conclusive.' I continued the work with a passionate interest...

I researched the correct movements, and by means of these movements, I found the harmony of touch, the musical memory, the improvement of the ear, all the faculties, which seem to be dormant in each of us.

These movements were relentlessly controlled in the laboratory experiments of Dr Féré in Bicêtre. Continued for ten years, the chronometric experiments established the unexpected fact that the movements of the automated fingers undergo delays, which result in some pianists appearing to be backward or deficient. While on the contrary, the movement of thought, the correct movement, accelerates—as it improves—the response

times allowing my pupils to respond to the signal of the chronometer with a precision only ascertained with great intelligence.”¹⁷³

Jaëll’s final years

In her later writings, Jaëll continued to explore the connections between thinking, inner hearing, and the physical sensations of touch and audition.¹⁷⁴ She was excited by recent discoveries about vision and integrated these into her unified theory. She used herself as the main subject of her exploration into the links between mental development and physical expression, between vision, thought and the impulses directing movement. In her observations of the natural and physical world she found relationships between touch and colours, between eye movements and rhythm, and saw evidence of her theories in simple interactions in the natural world. In her last important work, *The Resonance of Touch and Topography of the Fingertips*, published in 1912,¹⁷⁵ her ideas became more and more abstract, taking her on an increasingly esoteric path. Meanwhile, the direction of pianism and piano pedagogy was headed on a different course, one which increasingly diverged from that of Marie Jaëll.¹⁷⁶

¹⁷³ Kiener, *Marie Jaëll*, 72. English translation given in Myles Jackson, "Physics, Machines, and Musical Pedagogy," *Harmonious Triads: Physicists, Musicians, and Instrument Makers in Nineteenth-Century Germany* (2006): 38.

¹⁷⁴ Struber, "Education of Musical Thinking." Laure Struber gives a synopsis of Jaëll’s main ideas and the theories in each of her books in her 2017 Dissertation.

¹⁷⁵ Guichard, *Marie Jaëll the Magic Touch, Piano Music by Mind Training*, 202-03. Guichard describes the major ideas of this book.

¹⁷⁶ Lea Schmidt-Rogers, "Marie Jaëll: Pianist, Composer and Pedagogue," *American Music Teacher* 43, no. 4 (1994): 20, <http://www.jstor.org/stable/26406965>. In interviews with Jaëll’s niece, Schmidt-Rogers learned that at the end of her life, Marie aligned her piano perfectly north and south using a compass and also after examining a student’s fingerprints she designed exercises to suit their particular formation of papillary lines.

3.5 Jaëll the Teacher and Her Pedagogical Compositions

Ever since I have been working my hand regularly, the eyes of my intelligence are opened... There is a complete ethic hidden in your work; it is the best and the truest of my life. What a beautiful compass you give given me to measure the universe! It can be applied to everything.¹⁷⁷

–Catherine Pozzi

Jaëll the teacher

While little detail about Jaëll's personal teaching remains, her letters indicate that she began thinking about and making plans for her new method as early as 1887.¹⁷⁸ She tested her ideas on her students and invited them to perform with her in public recitals at the *Salle Pleyel*, which were well received. Some of her students participated in fingerprint and reaction time experiments in her Paris lab in the late 1890's.

Several students left positive remembrances of her. Catherine Pozzi (1882-1934), a Parisian socialite and poetess, began lessons with Jaëll in 1885 at only age three and in her early teens had weekly lessons. She describes her teacher as sometimes overbearing and demanding but also patient and meticulous.¹⁷⁹ Pozzi and Jaëll shared a warm friendship and continued to correspond throughout Jaëll's life. Albert Schweitzer (1875-1965), the renowned German physician, organist and humanitarian, took piano lessons with Jaëll in the late 1890's. In his

¹⁷⁷ Guichard, *Marie Jaëll the Magic Touch, Piano Music by Mind Training*, 153.

¹⁷⁸ Ingelaere, "Marie Jaëll Through the eyes of her correspondents," 98.

¹⁷⁹ Guichard, *Marie Jaëll the Magic Touch, Piano Music by Mind Training*, 143-44.

memoirs he described his participation in her experiments with Féré and of his high regard of her. “I was a pupil of Franz Liszt’s talented pupil and friend Marie Jaëll-Trautmann, an Alsatian by birth. She had already retired from a life of public piano recitals, at which, for a short time, she shone as a star of the first magnitude. She now dedicated herself to the study of the physiological aspects of piano playing. I was the guinea pig on which she tried her experiments, which were made in cooperation with the physiologist Féré, so I participated in them. How much I owe to this gifted woman!”¹⁸⁰

Jaëll’s Pedagogical Compositions

During her twenty-five-year career as a composer, Jaëll explored many different genres including orchestral, vocal, chamber music, and concertos. She wrote piano music for two and four hands, which show an ability to move between different styles and genres, including large scale abstract works. Most of her early compositions for piano were for solo performance, including a sonata and two piano concertos, Impromptu, and Album Leaf. She wrote salon music, sets of character pieces with programmatic titles or titles based on tempo or character and pedagogical music. The following are her compositions included in her major pedagogical method, *Le Toucher*, published in 1894 and 1899.¹⁸¹

Les Chasseurs p. 23

¹⁸⁰ Albert Schweitzer, *Out of My Life and Thought: An Autobiography*, trans. A.B. Lemke (New York: Henry Holt and Company, 1990): 17, quoted in Weinstein-Reiman, "Printing Piano Pedagogy," 4.

¹⁸¹ Marie Jaëll, "Le toucher : enseignement du piano basé sur la physiologie," (Paris: Costallet, 1899). Page numbers are from this 1899 edition.

Chanson Berçante p. 24
Petits Lutins p. 26
Conte de Fée p. 28
Petite Valse Chantante p. 29
Papillons Gris p. 30
Aussi vite que possible pp. 11-12
*Les Cloches Lointaines pp. 82-83
*Pauvre Mendiante pp. 84-85
* Supplication pp. 87-88¹⁸²

A second group of pedagogical works includes pieces she specifically dedicated to students, most notably the Spalding children. These were the first students on whom she tried her method.¹⁸³ The first set, *Les Beaux Jours, Petites pièces pour piano*, was dedicated to the three Spalding girls Kitty, Dudie and Flibbie. The second, *Jours Pluvieux*, its contrasting companion, was written for the boys, Ruy and Jimmy. The twenty-four pieces in these two sets have imaginative titles and variety of texture, style, key and affect. Since they were written with different students in mind, the pieces within the sets range in difficulty from beginner to late

¹⁸² The last three, marked with an asterisk, were originally published in 1877 as part of a set of character pieces entitled, *Harmonies Imitatives*.

¹⁸³ Marie-Laure Ingelaere, "Catalogue des Oeuvres Musicales de Marie Jaëll (1846-1925)," (Strasbourg: Fonds Marie Jaëll De La Bibliothèque Nationale Et Universitaire De Strasbourg, 2011), PDF. <https://www.mariejaell-alsace.com/biblio.htm>. Ingelaere speculates that these are the children of American organist and Harvard music professor Walter Raymond Spalding (1865-1962) who was studying in Paris at the time.

intermediate. Some technical requirements of the set include trills, octaves and octave leaps, arpeggiated triads and four-note chords.

In her pieces for children, Jaëll combines her personal wit and charm with characteristics from the great masters, including Bach, Beethoven, Schumann and Chopin. She employs late romantic chromatic harmonies with motivic development inspired by Beethoven. Jaëll's character pieces have the quality of "fragments" like many of Schumann's collections of short pieces, and like him, she draws on themes from nature and childhood with imaginative titles. The complimentary sets *Les Beaux Jours* and *Les Jours Pluvieux* explore many contrasting characters like Schumann's Florestan and Eusabius. Chopin's influence is seen in Jaëll's elegant melodies underpinned by figuration and harmonic development and in the "grace, conciseness, and clarity" of her writing.¹⁸⁴ As Chopin did in his Preludes and Etudes and J.S. Bach did in his Preludes, Jaëll fuses technical and musical elements, often using a single figuration or texture as a compositional principle.¹⁸⁵ This serves not only to unify the piece, but it also allows the developing pianist to focus on a single technical element.

¹⁸⁴ Roy Howat, "Chopin's Influence on the *fin de siècle* and beyond," in *The Cambridge Companion to Chopin*, ed. Jim Samson (Cambridge University Press, 1994). See Howat's discussion of the influence of Chopin on Debussy, Fauré, Chabrier, and Ravel. Jaëll's music exhibits many of the same influences.

¹⁸⁵ Finlow, "The twenty-seven etudes and their antecedents," 58-59.

CONTE DE FEE

à Marie-Anne Pottecher

MARIE JAËLL.

L'Étude

Une forte tension musculaire est de rigueur pendant toute la durée de l'étude. On comptera deux fois six doubles croches (ou 6 fois *UN, DEUX*) par mesure. Cette subdivision des temps permet d'isoler toutes les attaques et d'acquérir les représentations mentales tactiles et auditives.

Dans la main droite, on fera les glissés très au fond des touches (voir les trajets pointillés, fig. 19), et, entre les groupes de deux notes, les courbes seront supprimées dès que l'on étudiera les deux mains ensemble. Dans la main gauche, il importe que, pour les glissés réalisés pendant le croisement des mains, toute la longueur de la phalange de l'index soit mise en contact avec la touche, au début des glissés (voir fig. 18 et 20). Quant aux courbes de la main gauche, elles doivent être particulièrement hautes.

L'Exécution

(La tension est exigée aussi pendant l'exécution)

Il est préférable de ne pas compter pendant l'exécution, mais si l'on juge nécessaire de le faire, on ne comptera que 2 temps par mesure.

Les deux mains sont maintenues surélevées du côté du 5^e doigt; dans la main droite, notamment l'attaque du 5^e doigt doit être faite de très haut, et elle doit être relativement écourtée comme la note finale des groupes dans le morceau précédent; dans la main gauche, la surélévation de la main du côté du 5^e doigt doit permettre de jouer l'index sur la région la plus voisine du pouce. Quant au caractère de la sonorité, il doit être très différent dans les deux mains; toutes les attaques glissées doivent être très *vibrantes* dans la main gauche; dans la main droite, au contraire, elles sont *pianissimo*, à l'exception de celles du petit dessin mélodique indiqué en noires de la 7^e à la 12^e mesure. La pédale joue un rôle important dans le coloris de la sonorité; on l'enfoncera donc strictement selon les indications données, et l'on s'astreindra à faire toujours correspondre son relèvement à l'exécution de la dernière croche de la mesure.

Très doux, mais chantant.

Figure 7: Instructions for Practice and Performance of Conte de Fée. Marie Jaëll. *Le toucher*.

Enseignement du piano basé sur la physiologie Vol. III, 28. Source: gallica.bnf.fr/BnF.

Jaëll includes the piece *Conte de Fée* (Fairy Tale) in *Le Toucher* with instructions for learning and performance. See Figure 7. It is marked *Très doux, mais chantant*/ Very gentle, but singing. This fairy tale is simple and beautiful. While the right hand maintains a stable position near middle C with two-note slurs, the left-hand crosses above and below it, creating a dialogue between the lower voice and upper voice. The pedal adds colour to the mild chromaticism at the

end. For the study of the piece, Jaëll asks the student to maintain tension throughout, to sit low and to learn it slowly, subdividing each eighth note into two beats, as for other pieces. This subdivision of time makes it possible to isolate all the attacks and acquire the mental, tactile, and auditory representations of each note—the inner hearing, the feeling, and the sound. She gives direction for the right hand to slide very deep in the keys. “In the left hand, it is important that, for the slides performed during the crossing of the hands, the entire length of the phalangette of the index finger is in contact with the key. Both hands are to be kept elevated on the side of the 5th finger... As for the character of the sonority, it must be very different in the two hands; all slide attacks should be very vibrant in the left hand; in the right hand, on the contrary, they are pianissimo... The pedal plays an important role in the color of the tone; we will therefore play it strictly according to the indications.”¹⁸⁶

¹⁸⁶ Jaëll, "Le toucher : enseignement du piano basé sur la physiologie." Vol. 3, 28.

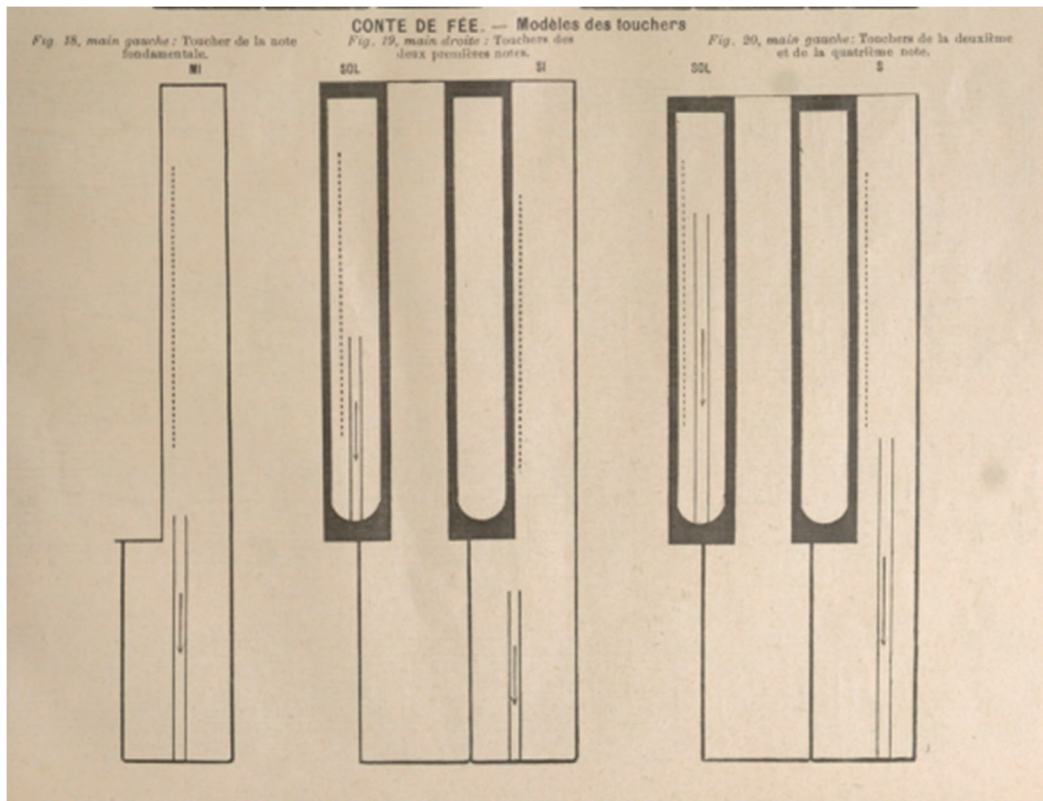


FIGURE 8: MODEL OF THE TOUCH FOR CONTE DE FÉE. MARIE JAËLL. LE TOUCHER. ENSEIGNEMENT DU PIANO BASÉ SUR LA PHYSIOLOGIE VOL. II, 27. SOURCE GALICA.BNF.FR./BNF.

CHAPTER 4: JAËLL'S RECEPTION AND INFLUENCE AFTER 1900

4.1 Reception

In her own time, reception to Jaëll's work was mixed. Despite having been distanced from Jaëll for several years, Camille Saint-Saëns read *La Musique et Psychophysiologie* and admired it. He wrote to her, "Its substance and form seem equally admirable. One could not better think nor better say, express more clearly things that are more instructive and more judicious, more beautiful and more true...this little book will follow me everywhere."¹⁸⁷ She described its reception in a letter to her friend Gosswine, "You ask me what people in Paris think of my book? Oh, nothing at all! Three people liked it: Jeanne Bosch, a pupil; Camille Saint-Saëns, an artist; and Charles Féré, a scientist."¹⁸⁸

Her correspondence shows that besides Charles Féré, other scientists and like-minded people wrote to her, expressing interest in and support of her work.¹⁸⁹ She was asked to present her ideas at several conferences, including one at the Sorbonne in 1912. She followed her talk, entitled "*L'Éducation du Cerveau par la Sensitivisation de la main*," with a performance that was favourably reviewed.¹⁹⁰

¹⁸⁷ Kiener, *Marie Jaëll*, 71., quoted in Struber, "Education of Musical Thinking," 74.

¹⁸⁸ Guichard, *Marie Jaëll the Magic Touch, Piano Music by Mind Training*, 148-49.

¹⁸⁹ Guichard, *Marie Jaëll the Magic Touch, Piano Music by Mind Training*, 197-98.

¹⁹⁰"Marie Jaëll (1846-1925) : pianiste virtuose, compositrice et pédagogue d'avant-garde," 2012, accessed August 4, 2021, <https://www.mariejaell-alsace.net/biog.htm>. "The Education of the Brain by the

The academic establishment itself was not so positive. A review of *La Musique et Psychophysiology* in a philosophical journal both patronized and praised, implying that she had ventured too far outside of her area of expertise.

It is with obvious passion that Mme Marie Jaëll takes on problems concerning philosophy, psychology, and the methodology of her art. She has read Helmholtz and Wundt, Spencer, Féré, Binet and many others. It is regrettable only that philosophy is a profession like the pianist's art, and that Mme Jaëll, by often obscure reasoning, tangled up in bold metaphors, belies an insufficiently drawn-out practice of her second profession. This is to be regretted, as her reflections on the role of the muscular sense and the tactile sense, on the method of the performing pianist and on the impressions of the listening public, indicate much erudition and experience.¹⁹¹

Despite Jaëll's popularity and influence during her early and mid-life, her name fell into relative obscurity in the early twentieth century outside of Paris and her birthplace in Steinseltz. I suggest that there are several reasons for her declining influence. These include personal style, gender, the rise of modernism, technological change, and Jaëll's increasing divergence from the mainstream of piano pedagogy in the early twentieth century.

Jaëll was introverted and studious; workaholic and extreme focus were hallmarks of her personal style. While she had close friends and family members whom she held dear, in her later years she became increasingly solitary and almost reclusive, especially after the death of Charles Féré in 1907. She misjudged the influence that her writing would have on its own merit, without

Sensitization of the Hand." Ingelaere shares highlights of her life and reception with facsimiles of the newspaper reviews at <https://mariejaell-alsace.net/pdf/biographie.pdf>

¹⁹¹ "Review of *La Musique et la psychophysologie*, by Marie Jaëll," *Revue de métaphysique et de morale* 4, no. 2 (1896), quoted in Weinstein-Reiman, "Printing Piano Pedagogy," 4.

performing, teaching, and lecturing to promote her ideas. In a letter to a student in later life she expressed regret that she had not put more effort into telling others about her work. Her lack of knowledge about how to disseminate her findings to succeeding generations and her the thought that her work would not survive her caused her much distress.¹⁹²

Her gender was a factor in her reception and cannot be ignored in a critical discussion about her work. Despite Jaëll's apparent confidence and passion, she faced resistance in each of her roles, as a pianist, composer, and especially as a scientific and philosophical writer. Maria Citron has discussed the importance of "Logos" or the power of the written word in disseminating and shaping cultural paradigms; because of the intellectual and rational nature of written word, women have traditionally been "denied full access to Logos."¹⁹³ In her writing, Jaëll delved into multidisciplinary scholarly areas of thought that were not historically open to women, including science, psychology, and philosophy. Even into the 21st century, female philosophers have been almost completely ignored.¹⁹⁴ The interest in neglected women

¹⁹² Kiener, *Marie Jaëll*, 106.

¹⁹³ Citron, *Gender and the Musical Canon*, 53.

¹⁹⁴ "Philosophy's gender bias: For too long, scholars say, women have been ignored.," *The Washington Post*, 2015, accessed Aug 23, 2021, <https://www.washingtonpost.com/news/grade-point/wp/2015/04/28/philosophys-gender-bias-for-too-long-scholars-say-women-have-been-ignored/>. In this 2015 op-ed, two professors from prominent universities, Andrew Janiak and Christia Mercer discuss the gender problem in the field of philosophy as exhibited by the 2015 publication of the "The Norton Introduction to Philosophy," "This textbook provides excerpts and commentary on 2,400 years of canonical texts, organized around central philosophical problems. It is philosophically astute, thoughtfully laid out — and contains no writings by women before the mid-20th century."

composers that began in the 1980's within the field of musicology was not paralleled within the field of philosophy.

Another major reason for her poor reception was the rise of modernism. This early-twentieth-century intellectual and artistic movement rejected many of the values of late Romanticism including European culture and Enlightenment philosophy that sought to understand the material and inner world through reason and analysis. Modernism rejected the idealism and spirituality that were so much a part of Jaëll's world-view, including her conception of music as a higher force in improving humanity. The concept of "artist-prophet" that had motivated the late Romantics-- Franz Liszt, Camille Saint-Saëns, and other members of the Société Nationale de Musique in Paris--became outdated in the early twentieth century. In her later years, her theories themselves moved farther and farther from the mainstream as Jaëll's world narrowed. She turned increasingly towards mysticism, while most pianists and pedagogues sought for greater physicality and virtuosity in their playing, performing and teaching.¹⁹⁵

Technology continued to influence pedagogy at the turn of the twentieth century, impacting Jaëll's reception both indirectly and directly. The invention of the phonograph replaced the piano as the centre of musical life in the home and slowed the growth of the piano

¹⁹⁵ Schmidt-Rogers, "Marie Jaëll: Pianist, Composer and Pedagogue," 20. In interviews with Jaëll's niece, Schmidt-Rogers learned that at the end of her life, Marie aligned her piano perfectly north and south using a compass and also after examining a student's fingerprints she designed exercises to suit their particular formation of papillary lines. "According to Marie's niece, Therese Klipffel, the family witnessed Marie growing more and more out of touch with reality in the last ten years of her life." Schmidt-Rogers, "Marie Jaëll: Pianist, Composer and Pedagogue."

industry. Aesthetic values shifted back towards virtuosity and external frames of reference as musical standards were measured against the recordings of the great masters and the perfect execution of the player piano. Jaëll's slow, mindful approach that advocated the dissociation of the fingers through an internal effort of will and a focus on simple movements ran counter to the new culture.

Changes to the design and manufacture of the piano itself was also a probable factor in Jaëll's reception. In a letter, Jaëll described how her method came alive with Pleyel and Erard, both Parisian pianos, but did not work on a Bechstein. She recounted how she would have to spend many hours practicing in her head to prepare for an upcoming performance in order to reorient herself to the different touch of this German piano.¹⁹⁶ It is probable that her finger-based touch, which emphasized nuances of expression and minute differences of finger placement, was influenced by the lighter-action and more responsive piano she was using for her research.¹⁹⁷ This style of piano, boutique-made in small numbers and with fine-tuned adjustment mechanisms fell out of favour and much reduced production around 1900 as the "American system" took hold throughout the world.¹⁹⁸ Between 1870 and 1910 French piano production

¹⁹⁶ Ingelaere, "Marie Jaëll Through the eyes of her correspondents," 99. "it [the Bechstein] cannot provide what it does not possess. Therefore, I must completely modify my style of striking the keyboard and my playing; this does not come from the fingers, but from the head. As a result, I am spending long hours [...] playing Bechsteins in my head... (Marie to Sandherr, November 11, 1885).

¹⁹⁷ Gerig, "Famous Pianists," 370. Tobias Matthay described the experience of meeting Rubinstein and hearing him play an Erard piano. Thereafter, he sought opportunity to play an Erard and noticed that the resistance he met on each key affected his execution of scales.

¹⁹⁸ Ripin et al., "Pianoforte." Despite differences between French and German pianos, they probably had more in common with each other than with American pianos. Viennese pianos fell victim to "changing

increased only 20%, while American piano production increased exponentially by a factor of fifteen during the same time.¹⁹⁹ Generalizations that “the iron-framed, cross-strung grands made by Steinway and its imitators from the 1860s onwards are essentially the same as the pianos used on concert platforms today,”²⁰⁰ may create a misleading assumption that everyone was on an equal playing-field when it came to piano action and function. We do not know the degree to which Jaëll’s approach was particularly suited to her piano.

After 1900, the different areas of interest within the field of music became increasingly specialized and independent. Music educators, composers, theoreticians, and music researchers engaged in less dialogue and collaboration with one another. As musicology in the twentieth-century narrowed its focus to Western Art Music, piano pedagogy was largely excluded from critical discussion.²⁰¹

4.2 Influence and Literature Review:

aesthetic paradigms in playing as well as building pianos. Viennese pianos required both a sensitive, sympathetic pianist of the old school, and a piano maker who was a skilful technician and worked with intuitive feeling, since the action was much harder to adjust with precision than a modern action with its many adjusting screws.”

¹⁹⁹ Ripin et al., "Pianoforte."“The Americans were able by shrewd marketing and vigorous pursuit of export trade to persuade the public that what was widely called the ‘American system’ was now the norm.”

²⁰⁰ David Rowland, "The piano since c. 1825," in *The Cambridge Companion to the Piano*, ed. David Rowland (Cambridge University Press, 1998), 46.

²⁰¹ Laor, "Nineteenth-Century Mechanistic Paradigm," 7.

Jaëll's most famous students included Elizabeth Caland, Albert Schweitzer, and Catherine Pozzi. Caland, best known for her transmission of Ludwig Deppe's teachings, was included as one of the twelve contributors to Alberto Jonás' *Master School of Modern Piano Playing and Virtuosity* and the only woman.²⁰² Albert Schweitzer translated some of Jaëll's books into German which began transmission of her theories in that country. An early article with remembrances of Jaëll was published in 1914 by her student and admirer, Catherine Pozzi, a poet and socialite. Pozzi's journals and correspondence, published much later reveal the depth and their friendship and Jaëll's influence on her.²⁰³

Josefa Llorét de Ballenilla (1878-1908), a piano professor in the school of the Ateneo of Madrid, translated Jaëll's works into Spanish between 1901 and 1905, and brought her ideas into Spain.²⁰⁴ Another important student, Jeanne van's Gravemoer, a Dutch teacher and writer, furthered Jaëll's ideas in Holland with *L'Oeuvre de Marie Jaëll*, in 1925 and *L'Enseignement de la Musique par le mouvement conscient* in 1938.²⁰⁵ Her student Marie Troost's *Art et Maîtrise des Mouvement pianistique*, published in 1951, describes the Lisztian characteristics of Jaëll's

²⁰² Alberto Jonás, *Master School of Modern Piano Playing & Virtuosity* (New York; Boston: Carl Fischer, 1922).

²⁰³ Catherine Pozzi, "Le Problème de la Beauté musicale, l'Oeuvre de Marie Jaëll," *Cahiers alsacien*, Mars, 1914. A book, recently published in French presents Pozzi's extensive correspondence with Marie Jaëll, her friend and teacher. Jaëll and Pozzi, *Je suis un mauvais garçon : journal d'une exploratrice des rythmes et des sons ; suivi de correspondances avec Catherine Pozzi*.

²⁰⁴ Victoria Alemany Ferrer, "The Establishment of the Modern Piano Pedagogy in Spain: The Case of Valencia," *Fontes Artis Musicae* 57, no. 2 (2010): 192, <http://www.jstor.org/stable/23512329>.

²⁰⁵ Jeanne Bosch van 's Gravemoer, *L'enseignement de la musique par le mouvement conscient : (une pédagogie)*, ed. Marie W. Troost (Paris: Les Presses Universitaires de France, 1938).

teaching. This short volume, with a preface written by Eduardo de Pueyo, includes an excerpt from Jaëll's *Mécanisme du toucher*, as well as some thoughts by Troost's teacher Jeanne Bosch van's Gravemoer.²⁰⁶

A thread of her pedagogy has continued to this day through several pianists who have taught according to her method. The pianist Eduardo del Pueyo (1905-1985), professor at the Royal Conservatory of Bruxelles, was taught by one of Jaëll's students. He described her method, in a 1939 article published in the *La Revue internationale de musique*.²⁰⁷ Pueyo taught the Georgian pianist Ethèry Djakeli, a major influence in disseminating Jaëll's work in the late twentieth century, especially through her students Irakly Avaliani²⁰⁸ and Catherine Guichard in Paris. Djakeli also translated two of Jaëll's books into Russian and Georgian.

Determined not to see Jaëll's legacy disappear, a group of former students, including André Reu, Jacques Weiss-Bergner, and Eduardo del Pueyo, gathered in Paris in 1957 to form an organization dedicated to Marie Jaëll. The Association Marie Jaëll has chapters in Spain, Germany, Switzerland, and Lyon. The training school they founded in Paris is now called

²⁰⁶ Troost et al., *Art et maîtrise des mouvements pianistiques. Préface d'Eduardo del Pueyo*. Troost's descriptions of the theories of Marie Jaëll are sometimes clearer than those of Jaëll herself. Ott, *Lisztian Keyboard Energy*.

²⁰⁷ Eduardo del Pueyo, "Autour de la "Méthode" de Marie Jaëll et de son apport à l'enseignement du piano," *Revue internationale de musique* nos. 5-6 (April 1939), <https://catalogue.bnf.fr/ark:/12148/cb432183424>.

²⁰⁸ Ethèry Djakeli introduced Irakly Avaliani to Marie Jaëll's methods in 1975 and reconstructed his technique. Later, Avaliani took up residence in Paris, gaining French citizenship, and served as President of the Association Marie Jaëll.

Association Marie Jaëll Montessori, which integrates the ideas of both Marie Jaëll and Marie Montessori in their education programs. In 1982 Charlotte Benoit published a teacher and student workbook, to be used as a resource for teaching Jaëll's method.²⁰⁹

In France, several important works discuss the life and work of Marie Jaëll. Hélène Kiener published the first biography of Jaëll in 1952, *Marie Jaëll: Problèmes esthétique et de pédagogie musicale*,²¹⁰ which included excerpts from Jaëll's journals and letters, a summary of her ideas, and biographical material. *Marie Jaëll: Un Cerveau De Philosophe Et Des Doigts D'artiste*, published in 2003, edited by Laurent Hurpeau is an important addition to the body of work about Jaëll and her life.²¹¹ Although it is not translated into English, extracts from the book were translated and included in the CD booklet mentioned below.

An important figure in preserving and bringing Marie Jaëll's work to light is Marie-Laure Ingelaere. As a curator of the Bibliothèque Nationale et Universitaire de Strasbourg (BNUS) archive from 1972 to 2010 Ingelaere was instrumental in creating the Fonds Marie Jaëll. As a

²⁰⁹ Marie-Charlette Benoit-Heu, *Apprends à toucher le piano, la méthode Jaëll pour les jeunes débutants* (Paris: Billaudot, 1986).

²¹⁰ Kiener, Hélène. *Marie Jaëll 1846-1925: Problèmes d'esthétique et de pédagogie musicales*. Préface D'andré Siegfried. Ill. In-Texte Et Horstexte. Flammarion, 1952. Hélène Kiener was the daughter of Marie's cousin on the maternal side, Madeleine Keiner née Rempp.

²¹¹ Hurpeau, *Marie Jaëll: un cerveau de philosophe et des doigts d'artiste*.

champion of Jaëll's life and work, Ingelaere created the *Catalogue Des Oeuvres*²¹² and organized a conference dedicated to Jaëll in Strasbourg in 1997.²¹³

Until the past few years, the name Marie Jaëll has been virtually unknown in the English-speaking world. Besides a general-interest book about her, written in 2004 and translated from the French into English, only a handful of published academic articles and a few entries in reference books mention her. Harold Schonberg gives a passing reference to her in his 1963 compendium, *The Great Pianists from Mozart to the Present*.²¹⁴ Reginald Gerig's only mention of her in his encyclopaedic work, *Famous Pianists and their Technique*, is in a list of ten teachers who were part of the "torrent" of publications on "piano technique with an emphasis on physiology" after 1890.²¹⁵

Lea Schmidt-Rogers, an American college piano teacher, introduced Marie Jaëll to English-speakers in two journal articles in the mid 1990's.²¹⁶ In addition, Schmidt-Rogers

²¹² Ingelaere, "Catalogue des Oeuvres Musicales de Marie Jaëll (1846-1925)."

²¹³ After her retirement in 2010 until 2017, she served as President of the Association Marie-Jaëll-Alsace. She maintains a personal website devoted to Marie Jaëll with current events, publications and news about Jaëll. <https://mariejaell-alsace.net/>

²¹⁴ Schonberg, *The Great Pianists*, 188. He mentions Marie in a parenthetical comment about Alfred, "Jaëll (who was married to Marie Trautmann, a good pianist and an eminent teacher who wrote several important books about the physiology of playing) did considerable touring and helped raise standards in America."

²¹⁵ Gerig, *Famous Pianists*, 329.

²¹⁶ Schmidt-Rogers, "Marie Jaëll: Pianist, Composer and Pedagogue." This brief article gives information from firsthand interviews with nieces and students. Lea Schmidt-Rodgers, "Marie Jaell, Alsatian Composer-Pianist," *Women of Note Quarterly* 4, no. 1 (1996). She describes Jaëll's performing and certain ideas from her method. The article contains some inaccurate dates.

edited two books of Jaëll's piano music, published by Hildegard Publishing and recorded several pieces for piano and piano four-hands in 1998.²¹⁷

Catherine Guichard discovered the work of Jaëll in Paris in 1980 when she began studies in Paris with Ethère Djakéli. Her 2004 book, *Marie Jaëll: The Magic Touch, Piano Music by Mind Training*,²¹⁸ translated from the French, is a general introduction the life and ideas of Jaëll, who is depicted as a passionate personality, a product of the Romantic movement, and a powerful, gifted person. Guichard draws from the letters and journals of Jaëll as well as those of her contemporaries to paint a lively portrait. A non-academic book, it is missing detailed references for the quotations from the life and letters of Jaëll and her contemporaries. While the English edition gives references to Kiener's important 1952 biography in the footnotes, including page numbers, Kiener's biography itself is strangely absent from both the bibliography and index at the end of the book. Guichard's claims about Jaëll's foresight into the unity between movement and spatial awareness as well as connections to more recent neurological findings about the brain and music are interesting.

In the past five years, interest in the life and work of Marie Jaëll has grown exponentially, largely due to increased availability of recordings. The German pianist Cora Irsen recorded

²¹⁷ Marie Jaëll, Vera Karl Rathje, and Lea Schmidt-Rogers, *French character pieces and Valses à quatre mains, op. 8* (La Mesa, CA1998).

²¹⁸ Guichard, *Marie Jaëll the Magic Touch, Piano Music by Mind Training*. After completing her teacher training at the Association Marie Jaëll school in Paris, Guichard taught there until her death in 2020. She was a co-founder of the Association Marie Jaëll Internationale in 1998

Jaëll's complete works for piano and authored a book about Jaëll in German, released in 2015-16.²¹⁹ The same year, the Centre de Musique Romantique de Française, which has a mandate to bring out the works of 19th century French composers, released a selection of her instrumental, vocal, symphonic and piano works.²²⁰ The three-CD set includes a booklet with several essays about Jaëll and a short summary of the book, *Marie Jaëll: Un Cerveau De Philosophe Et Des Doigts D'artiste*, edited by Lawrence Hurpeau.²²¹

In English, several academic works have been published that discuss specific aspects of Jaëll's pedagogy.²²² Laure Struber's PhD. dissertation, "The Education of Musical Thinking Through the Hand According to Marie Jaëll (1846-1925)," is an important contribution to the academic study of her theories. Although it begins with a biographical introduction to the life and work of Jaëll, Struber's main emphasis is on Jaëll's writings and method. She lists the major

²¹⁹ Marie Jaëll, Cora Irsen, and Marie Jaëll, *Complete works for piano* (2015). The recording began as a personal project for Irsen, through a crowdfunding campaign she launched in 2014 which was taken on by the German label *Querstand*. Cora Irsen, *Marie Jaëll: die charmante Unbekannte* (Aufl.: Verlag, 2016).

²²⁰ Marie Jaëll, *Marie Jaëll (1846-1925) Musique symphonique Musique pour piano*, ed. Bismuth et al., Collection « Portraits ». 3 vols. (Palazetto Bru Zane, 2016). The three-CD set is the third in a series entitled, "Portraits," that is dedicated to "unjustly neglected" 19th century composers. The Centre, located in Venice at the Bru Zane Palazzo, also has a robust website with entries about musical style, trends, and people, including an entry about Jaëll.

²²¹ Hurpeau, *Marie Jaëll: un cerveau de philosophe et des doigts d'artiste*. The essays, which are also available in English in PDF format include an introductory biographical essay by Catherine Guichard, as well as several other essays: Alban Ramaut, *Marie Jaëll*; Sébastien Troester, "A Passion for Composing"; Marie-Laure Ingelaere, "Marie Jaëll in the Eyes of her Correspondents," Florence Launay, "Marie Jaëll and the Other Women French Composers from the end of the 19th Century." <https://bruzane.com/en/publicazione/musique-symphonique-musique-pour-piano/>

²²² Kursell, "Visualizing Piano Playing, 1890-1930.," Weinstein-Reiman, "Printing Piano Pedagogy." Myles W. Jackson, "Measuring Musical Virtuosity: Physicists, Physiologists, and the Pianist's Touch in the Nineteenth Century," *Journal of the American Liszt Society* 61-62 (2010).

concepts in each of Jaëll's books, detailing Jaëll's theories and the unique methods she employed in formulating her ideas, including photographs of Jaëll's hand exercises, her ink-blot experiments, and facsimiles from her books. She also guides the reader through several of the pieces in Jaëll's method in order to show how Jaëll applied her theory. Struber includes her own English translations of quotations from the diaries, letters and publications of Jaëll. While a thorough introduction to and summary of Jaëll's life and work, Struber's dissertation does not provide critical analysis of her theories or a contextual framework for understanding them. Other than a brief introduction to Jaëll's teacher Henri Herz and mechanistic piano practices, Struber's dissertation does not situate Jaëll's method within the field of pedagogy or detail the sources of her innovation.²²³

Due to the growth of internet resources and digital media, the name Marie Jaëll is beginning to be heard and seen more frequently. Online blogs, magazines and websites have been instrumental in this, as well as radio play of her music. The website of the Association Marie Jaëll Internationale²²⁴ is an important online resource that includes biographical material, printable sheet music, access to past newsletters of the association and current events related to Jaëll. Bru Zane Palazzo's website has entries about musical style, trends, and people, including a

²²³ Struber, "Education of Musical Thinking," 23. Struber says, "Jaëll's study with Henry (sic) Herz is of special interest, as her later method is the antithesis of Herz's more traditional piano teaching that emphasized the virtuosity rather than musicality, relying on hours of repetitive and stubborn practice, and obsessed with technique in a mechanical sense."

²²⁴ <http://www.mariejaell.org/wordpress/>

robust entry about Jaëll.²²⁵ In September 2020 the BBC podcast series, “Composer of the Week” with Donald MacLeod, featured Jaëll for the first time in an excellent introduction to her life and music. The American blogger Emily Hogstad featured her in 2017 on her blog “Song of the Lark,”²²⁶ and Anne-Marie Polome wrote a four-part series on Jaëll for the French-language magazine *Crescendo*²²⁷ entitled, “The Four Wings of Marie Jaëll.” One of the advantages of online material about Jaëll is the ability to see English translations in real time.

Despite increased interest in Marie Jaëll and her music and work, much remains to be done. Although many of her compositions were published during her lifetime, there is limited accessibility today to Jaëll’s sheet music and many scores are difficult or impossible to obtain. Specific writing about her compositions is almost non-existent. Although German, Spanish, Russian, and Dutch translations of some of her works were published in the late nineteenth and early twentieth century by her students, English translations of her works, which would provide an important source for the dissemination of her ideas, have not been done.

²²⁵ "Marie Jaëll," Bru Zane Media Base. Centre de Musique Romantique Française, 2021, accessed August 23, 2021, <http://www.bruzanemediabase.com/eng/Persons/JAELLMarie/>.

²²⁶ Emily E. Hogstad, "Marie Jaëll: Pianist, Composer, Reclusive Workaholic," September 5, 2021, <https://songofthelarkblog.com/2017/11/01/marie-jaell/>.

²²⁷ "Les quatre ailes de Marie Trautmann-Jaëll," *Crescendo Magazine*, 2020, accessed August 23, 2021, <https://www.crescendo-magazine.be/les-quatre-ailes-de-marie-trautmann-jaell-i/>. *Crescendo Magazine*, a Belgium-based French-language publication dedicated to French classical music began in 1993, with six issues per year. In 2006, they moved to an online-only format. They cover international classical music news, reviews, recordings, and interviews.

This thesis came out of my desire to understand the origins and influences of Jaëll's thinking in the context of the development of pianism.²²⁸ To what extent were her ideas a natural product of the cultural and intellectual milieu in late nineteenth-century Paris, or were her theories radical and original? While Jaëll herself described the influence of Liszt on her views about music and technique, a closer examination of his influence on her playing and teaching is needed. Also of great interest would be an examination of her theories about focus, awareness, and the interplay between touch, vision, learning, and motor control in the context of modern neuroscience. While this thesis has touched on some of her scientific influences, the specific philosophical and scientific ideas that she integrated in her method deserve closer examination.

4.3 Conclusion

Marie Jaëll's vision to create an integrated approach to the piano combined many areas of discovery including observation, experimentation, analysis, and scientific knowledge with musical artistry. The holistic conception that she imagined is still a century later by pianists and pedagogues. In the 21st century, with greater tools for measurement and a more robust understanding of the brain, the study of the interconnectedness of touch, sensation, memory, motor control, and attention is expanding. A new field of study-- music cognition, or the

²²⁸ Shaul Mirensky, "L'approche spatio-polyphonique dans les interprétations des pianistes de la deuxième moitié du XIXe siècle et la première moitié du XXe siècle" (Aix-Marseille, 2014). Shaul Mirensky, in his 2014 DMA dissertation, also in French, does compare Jaëll's ideas to the changes in pedagogy at the fin de siècle. "The spatio-polyphonic approach in the interpretations of pianists of the second half of the 19th century and the first half of the 20th century."

cognitive neuroscience of music-- has experienced exponential growth in the past two decades. Some areas of inquiry include the functional neuroanatomy of music processing in humans, “the perception of components of musical processing, musical structure, laterality effects, cultural issues, links between music and movement, emotional processing, [and] expertise.”²²⁹ A recent article called “The Neuro-pianist” explores current research into concepts such as bi-manual control, automaticity, and mental strategies to reduce physiological effects of performance anxiety.²³⁰ These writings show a continued fascination among the scientific community with research to unlock the mysteries of music, motor control, and the brain and the interconnections between thought, movement, hearing, and learning.²³¹

There is still a temporal and practical divide, however, between research into best practices and current pedagogical practice. In a letter published in the journal *Medical Problems of Performing Artists*, a piano student asks for help to sift through the many perspectives and conflicting information about piano technique. He asks, “Why haven't we used the scientific method to determine optimal piano technique?” Four expert performer-teachers answer the question differently, highlighting the complex nature of the problem. Several threads common to

²²⁹ Daniel J Levitin and Anna K Tirovolas, "Current advances in the cognitive neuroscience of music," *Annals of the New York Academy of Sciences* 1156, no. 1 (2009): 211. Modern instruments used in this work include including fMRI, PET, ERP, MEG, and lesion studies.

²³⁰ Eitan Globerson and Israel Nelken, "The Neuro-Pianist," Opinion, *Frontiers in Systems Neuroscience* 7, no. 35 (2013-July-31 2013), <https://doi.org/10.3389/fnsys.2013.00035>, <https://www.frontiersin.org/article/10.3389/fnsys.2013.00035>.

²³¹ Eckart Altenmüller, Mario Wiesendanger, and Jürg Kesselring, *Music, Motor Control and the Brain* (Citeseer, 2006).

Jaëll's theories emerge, including the idea that piano technique is "more about body-mind coordination than precise mechanics," and that awareness of movement and posture can prevent the tension that may lead to overuse injuries.²³² Like Jaëll, they discuss the importance of combining empirical, scientific, or evidence-based information with the musical considerations and with attention to the specific and personal variations between each student. Another says that, due to the complexities inherent in the task, "studying piano technique from a purely scientific approach is fraught with problems."²³³ While Jaëll emphasized a scientific approach, it was in a holistic context as summarized by one expert, Dr. Brenda Wristen: "piano playing comes down to imagining a sound and then using the appropriate technical tools in order to bring that sound forth. Good piano pedagogy attempts to systematically guide students in establishing both the musical/artistic and technical skills to this end. Logic, anecdotal experience, and sound knowledge of scientific principles should all be brought to bear."²³⁴

Because specific aspects of Jaëll's theories and pedagogy may seem strange or outmoded within our current view of piano technique, there is a possibility that her work will not be given the attention that it merits. Some of these difficult ideas include the intricacies of touch at the fingertips including organized papillary lines, sliding along the keys, and the importance of colours and visual lines. Viewed in a modern lens, it is clear that the anatomical and neuronal

²³² Matthew; Lee Arthur, Sang-Hie; Wristen, Brenda; Berenson, Gail; Riley, Kathleen, "Piano Technique," Research Article, *Medical Problems of Performing Artists*, no. 28(2) (March 2013): 115, <https://doi.org/https://doi.org/10.21091/mppa.2013.2022>.

²³³ Arthur, "Piano Technique," 115.

²³⁴ Arthur, "Piano Technique," 116.

models upon which she based her theories were incomplete or inaccurate. The tools she had at her disposal to test her theories were primitive, and some of her scientific methods do not meet modern empirical standards.

Her approach to the problems of the pianist and to pedagogy itself, however, was revolutionary. By focussing only on her specific theories, we may miss the greater message of her work. While her voice was largely unheeded in her day, her important vision and her interdisciplinary approach are still relevant today. Lia Laor points out that, “Despite contemporary musicologists’ explicit interest in music within the fabric of sociocultural life, their research has mostly overlooked the important educational processes and practices for training the musician-performer, as well as the existing repertoire dedicated to initiating young children into the world of music.” Her call to action is for “fruitful interdisciplinary collaboration based on a more inclusive approach to music research, both in the fields of musicology and piano pedagogy.”²³⁵

Marie Jaëll undertook “*bold novelties, dangerous works, successes that one wins with a hard fight.*”²³⁶ She called upon musicians to learn from science. She led the way, challenging many of the foundational principles of traditional piano teaching and introducing unique ideas. Her own practical method was designed to integrate the principles gleaned from personal observation, reasoned analysis, and scientific experience. At the crossroads between two

²³⁵ Laor, "Nineteenth-Century Mechanistic Paradigm," 8.

²³⁶ Saint-Saëns, *Écrits sur la musique et les musiciens. 1870-1921*. See footnote 3.

centuries, two cultures, and a changing intellectual landscape, she offered a vision of the pianist as a creature of independent will, not habit, whose awareness of herself and her sensations could guide her to ultimate expression.

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APPENDIX A

Musical Works included in *Le Toucher. Enseignement du piano basé sur la physiologie* (1899)

Volume 2:

- J.S. Bach: Prelude in C major²³⁷ pp. 7-8
 Prelude in C minor pp. 9, 11
- R. Schumann: March Militaire p. 12
 Petite Etude pp. 14, 16
- J.S. Bach: Gigue in g minor pp. 17, 19
- R. Schumann: Fantaisie Dance pp. 20,22
- M. Jaëll: Les Chausseurs p. 23
 Chanson Berçante p. 24
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 Petite Valse Chantante p. 29
 Papillons Gris p. 30
- F. Mendelssohn: Romance Sans Paroles pp. 31, 33
- J. S. Bach: Prelude in D Major p. 34, 36
 Prelude in G major, pp. 37, 38
 Prelude in D minor pp. 39-41
 Prelude in F major pp. 43-44
- F. Schubert: Impromptu *Allegretto* pp. 45-53
- F. Chopin: Prelude in C minor, Op. 28 no. 20 p. 55
- J.S. Bach: Prelude in C minor pp. 56, 58
- R. Schumann: Romance D minor pp. 59, 61-64
- J. S. Bach: Prelude (Fantaisie) from the collection Bach-Gesellschaft pp. 65, 67
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²³⁷ All Preludes by J.S. Bach are from Book 1 of *The Well-Tempered Clavier* unless indicated.

F. Liszt: Etude in G minor Op. 1, *Molto Agitato* pp. 68, 69-71

R. Schumann: Arabesque, *Leger et doux* pp. 72, 74-79

Romance in F sharp major pp. 80-81

J. S. Bach: Prelude in B flat major pp. 82, 84

Volume 3 :

M. Jaëll: Aussi vite que possible pp. 11-12

R. Schumann: *Kreisleriana* "Extremement anime" pp. 19-21

F. Chopin: Etude in C major, Op 10, No. 1 p. 23-27

Etude in C, Op. 10 No. 7 pp. 29-32

F. Mendelssohn: Etude in A minor Op. 104b, No. 3 pp. 34-36

F. Chopin: Etude in F major Op. 25, No. 3 pp. 39-43

Etude in F minor, Op. 25, No. 2 pp. 45-48

Etude in A flat major, Op. 25, No. 1 pp. 52, 54-58

R. Schumann: Intermezzo from *Carnival of Vienna* Op. 26, No. 4 pp. 60-64

Novellette, pp. 66-69

Novellette in D minor, Op. 21, No. 1, pp. 71-77

Presque Trop Serieux G sharp minor, pp. 79-80

M. Jaëll: Les Cloches Lointaines, pp. 82-83

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Supplication, pp. 87-88