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Teaching the basic violin bowing technique: A comparative study of bowing technique of selected violin schools from 1751 to 1974

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TEACHING THE BASIC VIOLIN BOWING TECHNIQUE: A COMPARATIVE STUDY OF BOWING TECHNIQUE OF SELECTED VIOLIN SCHOOLS FROM 1751 TO 1974

by

Kexi Liu

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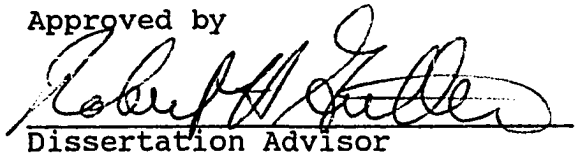

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Although much has been written on the history of violin playing and violin-playing techniques, *comparative* studies of bowing techniques can seldom be found. Comparative discussion of pedagogic materials, in particular, is even rarer. This study presents a number of possibilities in teaching violin bowing technique by surveying and comparing the teaching methods of master teachers of different periods.

Geminiani, L. Mozart, and L'Abbé le fils have been chosen as representatives of the eighteenth century. Baillot and Spohr represent the nineteenth century. The twentieth-century representatives include Auer, Flesch, Galamian, and Rolland. Their methods reflect the impact of the development of the construction of the bow, of musical trends, and of personal performing styles.

This study compares, from a pedagogic viewpoint, the similarities and differences among the basic bowing techniques of the selected violin schools. The comparison focuses on the execution rather than the application of bowing techniques, that is, on how the bow is handled instead of the usages of bowing techniques in musical compositions and performances. Basic bowing techniques

include holding of the bow, tone production, and basic strokes such as the détaché, legato, martelé, spiccato, and staccato. In addition to the discussion on bowing techniques, seven comparative tables are provided for quick reference, one each for Chapters IV-X.

To My Wife

for her love and support;

To My Daughter And Son

for their understanding and patience;

And To My Parents

for their high expectation.

APPROVAL PAGE

This proposal has been approved by the following committee of the Graduate School at the University of North Carolina at Greensboro.

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CHAPTER I

INTRODUCTION

Leopold Mozart (1719-1787) wrote in A Treatise on the Fundamental Principles of Violin Playing, ". . . the bowing gives life to notes . . .."[1] Similarly, L'Abbé le fils (1727-1803) called the bow "the soul of the instrument it touches, as it is used to give expression to the sounds, sustain them, swell and diminish them."[2] The concept of the bow as the soul of the violin is evident in the literature of violin pedagogy, and bowing technique occupies an important place in that literature.

The development of the bow lagged behind that of the violin. More than half a century passed between the standardization of the violin by Antonio Stradivari

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[1]Leopold Mozart, A Treatise on the Fundamental Principles of Violin Playing, trans. Editha Knocker (London: Oxford University Press, 1948; rev. 1951), 114.

[2]The translation of this quotation of L'Abbé le fils' Principes du violon is from Robin Stowell's Violin Technique and Performance Practice in the Late Eighteenth and Early Nineteenth Centuries (New York: Cambridge University Press, 1985), 57. Since there is no English edition of Principes du violon available, when quoting L'Abbé le fils this writer either uses translations from secondary sources or makes his own translation. If a quotation is translated by this writer, the original text will be provided in the footnote.

(1644-1737)[3] and the standardization of the bow by François Tourte (1747-1835) in the second half of the eighteenth century (around 1785). The development of bow construction in the decades preceding its standardization influenced a parallel development of bowing technique.

A number of treatises on violin playing appeared during the several decades before Tourte's standardization of the bow. The most important were those of Francesco Geminiani,[4] L. Mozart, and L'Abbé le fils, which summarized violin-playing techniques of their time. These treatises were representative of three major violin schools of that period, respectively: Italian, German, and French.

The late eighteenth and early nineteenth centuries witnessed the transition from the Classical period to the Romantic, as well as from the Baroque and transitional bows

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[3]It was Antonio Stradivari who refined and finalized the structure and form of the violin. He is universally recognized as the greatest violin maker in history. In 1704, Stradivari made the "Betts" violin which became the model for his later violins and for many other violin makers. The form of Stradivari's violin has remained the standard of excellence to the present. What has become known as Stradivari's golden period extended from 1700 to the mid-1720s.

[4]The date of Geminiani's birth had been a question for a long time. Older sources gave different years as his birth date, such as 1680, 1674, even as early as 1667. Following Adolfo Betti's research, most scholars have accepted 1687 as the year of his birth. He died on September 17, 1762, at Dublin, Ireland. For details, see Adolfo Betti, "Francesco Geminiani: His life and His Art," The Strad 73 (1962-63), 215-51.

to the Tourte bow. In the nineteenth century, numerous violin method books were written. Among the most important violin pedagogues were P. M. F. de Sales Baillot (1771-1842) of the French school and Louis Spohr (1784-1859) of the German school. Their pedagogic books were among the earliest in which the discussions on bowing technique were based on the use of the Tourte bow.

The twentieth century has seen the development of many different approaches to bowing pedagogy. Some methods carried on the nineteenth-century tradition; some came from different directions and offered new concepts. Leopold Auer (1845-1930), Carl Flesch (1873-1944), Ivan Galamian (1903-1981), and Paul Rolland (1911-1978) are among the most significant representatives of the modern era of violin pedagogy.

There are many schools of bowing technique represented in the history of violin playing. The works of the pedagogues, understood in their proper historical perspective, are an invaluable aid to the modern violinist in the quest for a comprehensive technique.

Statement of the Problem

There is no question that bowing technique occupies an extremely important position in violin playing and pedagogy. Although much has been written on the history of violin playing and violin-playing techniques, *comparative* studies

of bowing techniques can seldom be found. Comparative discussion of pedagogic materials, in particular, is even rarer. A comparative study of bowing techniques, as described by pedagogues, will reveal similarities and differences between violin schools and help violinists, teachers, and students to understand, develop, master, and teach bowing techniques.

Description of the Project

The purpose of this project is to provide a comparison of basic violin bowing techniques of selected violin schools of different periods. The comparison will expose the changes in bowing techniques that occurred when violinists switched from the pre-Tourte bow to the Tourte bow. It will also reveal differences and similarities in bowing technique of violin schools within each given period.

The period covered in this project begins in 1751. This is the publication year of Geminiani's The Art of Playing on the Violin which is called by Boyden "the first important work that gives an insight into the traditions of the Italian school of violin playing,"[5] and is the earliest treatise discussed in this study. It ends in 1974, the year of publication of Rolland's The Teaching of Action in String

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[5]David Boyden, "Geminiani and the First Violin Tutor," Acta musicologica 31 (1959), 162. Also see Chapter III of this dissertation.

Playing. Geminiani, L. Mozart, and L'Abbé le fils are representatives of the eighteenth century. Their treatises, respectively, The Art of Playing on the Violin (1751), A Treatise on the Fundamental Principles of Violin Playing (1756), and Principes du violon (1761) will be discussed. The nineteenth century is represented by Baillot's The Art of the Violin (1835) and Spohr's Violin School (1832). Twentieth-century representatives are Auer's Violin Playing as I Teach It (1921), Flesch's The Art of Violin Playing (1924-30), Galamian's Principles of Violin Playing & Teaching (1962), and Rolland's The Teaching of Action in String Playing (1974).

This dissertation will compare, from a pedagogic viewpoint, the similarities and differences among the basic bowing techniques of these schools. The comparison will be based on the execution rather than the application of the bowing techniques. In other words, it will focus on the mechanics of how the bow is handled instead of the usages of the bowing technique in musical compositions and performances. Basic bowing techniques include holding the bow, tone production, and basic strokes such as the détaché, legato, martelé, spiccato, and staccato. In addition to the discussion of bowing techniques, seven comparison charts are provided for quick reference.

Status of Related Research

Numerous articles, dissertations, and books have been written about violin-playing techniques. Several of them are closely related to this project.

Sol Babitz's article, "Differences between Eighteenth Century and Modern Violin Bowing,"[6] compares the general bowing characteristics of the eighteenth and twentieth centuries. Issues discussed in his article include: the basic crescendo-decrescendo character of the early bow; the crescendo-diminuendo stroke and eighteenth-century expression; the slur and non-legato bowing; the silence between strokes; the staccato, spiccato and accents; and multiple stops. He concludes that there can be no authentic performance of early music unless the authentic machinery of performance has been restored. Although his article does not deal much with the mechanics of how the bow is handled, he provides useful information about bowing characteristics of the eighteenth and twentieth centuries.

Gerard Matte's dissertation, "The History of Violin Bowing and Its Impact Upon Performance,"[7] traces the

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[6]Sol Babitz, "Differences between Eighteenth-Century and Modern Violin Bowing" The Score and I. M. A. Magazine 19 (March, 1957), 34-55.

[7]Gerard Matte, "The History of Violin Bowing and Its Impact upon Performance: with Videotape Illustrations of Bowing Technique in Selected Musical Examples" (Ed. D. diss., New York University, 1973).

development of the technique of violin bowing from 1600 to the twentieth century. He also studies the impact of this development on today's performance of violin music of the past and present, and demonstrates on videotape how the bowing strokes discussed might be played in selected musical examples from each period of music. Matte's dissertation provides insight into the development and the application of bowing techniques in performance; however, it does not make comparisons between different schools, and it emphasizes the application of bowings instead of the execution.

Robin Stowell's recent study, Violin Technique and Performance Practice in the Late Eighteenth and Early Nineteenth Centuries covers the period during which violinists switched from the pre-Tourte bow to the Tourte bow. His discussion is based on the major pedagogical works that emanated from France, Italy, and Germany, the main countries to disseminate literature on violin technique and performance practice in this period. Stowell consults almost all the treatises covered in his book in the language of their original publication, and many of the extracts in his book have been translated into English for the first time.

There are other important sources such as David Boyden's The History of Violin Playing, from its Origins to

1761 and its Relationship to the Violin and Violin Music[8], which provides significant information about the violin and violin playing of early periods. However, comparative studies of bowing technique of different historical periods can seldom be found and this field is still not sufficiently explored. This writer hopes that his dissertation will contribute to the knowledge and understanding of violin bowing technique.

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[8]David D. Boyden, The History of Violin Playing, from its Origins to 1761 and its Relationship to the Violin and Violin Music (London: Oxford University Press, 1965).

CHAPTER II

THE BOW

The development of the modern bow from its forerunners took place over a long period. The standardization of the bow occurred much later than that of the violin. Half a century after Stradivari set the standard of violin construction in the early 1700s, violinists were still using unstandardized bows.

It was François Tourte, "the Stradivari of the bow," who set the still existing standards for the bow around 1785. His London contemporary John Dodd (1752-1839), who was unaware of the work of Tourte, also made contributions to the modern bow; other bow makers contributed to its evolution as well. However, Tourte's influence in the world of bow-making was preeminent and he has been considered the father of the modern bow.

During its development, the bow had a tendency to become longer and longer. This tendency can be seen in an illustration from F. Joseph Fétis' (1784-1871) Notice of Stradivari,[1] which has been cited many times by scholars. Generally speaking, the pre-Tourte bows were shorter than

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[1]For details about this illustration, see Joseph Roda, Bows for Musical Instruments of the Violin Family (Chicago, IL: William Lewis & Son, 1959), 44.

the Tourte bow. Boyden finds that the length of the so-called Italian "sonata" bow of the first part of the eighteenth century was between 24 and 28 inches.[2] According to Curry, the length of the bow varied in the third quarter of the eighteenth century and some bows were even longer than the modern bow.[3] After this transitional and experimental period, Tourte established the length of the violin bow at approximately 29.5 inches.

Historically, the development of the shape of the bow stick progressed from a convex to a concave curve. The bow became straighter and straighter as time passed and finally reached the concave shape. Tourte was not the first to conceive of the inward curve, but he used this shape consistently and used heating rather than cutting to achieve the curve. This was one of his major contributions to bow making. By using heating to produce the concave shape of the bow stick, Tourte gained more resilience in his bow.

Because of the concave arch of the stick, the head of the Tourte bow had to be higher than that of earlier bows to prevent the bow hair from hitting the stick while playing.

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[2]David D. Boyden, "The Violin Bow in the Eighteenth Century," Early Music 8/2 (April, 1980): 200.

[3]Pat Bryan Curry, "The François Tourte Violin Bow: Its Development and Its Effect on Selected Solo Violin Literature of the Late Eighteenth and Early Nineteenth Centuries" (Ph. D. diss., Brigham Young University, 1968), 37.

The head Tourte designed was hatchet-shaped and was heavier than that of the pre-Tourte bow which had either no head (only elongation of the stick) or a pike-like head. With its heavier head and greater length, the Tourte bow had a balance point further from the frog than did earlier bows. The center of gravity was approximately 7.5 inches from the nut.

The hairs of the early bow were not arranged to form a perfectly flat ribbon along their entire length. The device of the ferrule and slide was not in use, and the hair ribbon was narrower than that of the Tourte bow. Tourte used a metal ferrule and a slide to spread and fasten the hair to the frog. The ribbon of hair of the Tourte bow was wider and perfectly flat along the entire length of the bow. The width of the hair ribbon of the Tourte bow was typically 7/16 inch while that of the pre-Tourte bow might have been as narrow as 1/4 inch.

Hair tension was a problem before the screw mechanism of the frog was invented. This problem was partially solved by a device called the "crémaillière," a strip of notched metal fastened to the stick opposite the frog. The frog was movable and had attached to it a band of metal which could be looped over any of the notches of the crémaillière to adjust the tension of the hair. According to Roda, A. Corelli (1653-1713) and A. Vivaldi (1678-1741) still used

bows having this device.[4] Fétis believes that it was Louis Tourte, father of François Tourte, who was the first to abandon the crémaillière and to replace it with a screw mechanism.[5] However, Saint-George has a different opinion. He uses a figure in his book to illustrate a seventeenth-century bow which had a screw mechanism and writes:

> These early bows with screw-nuts quite dispel the generally accepted theory that this mechanical contrivance for regulating the tension and preserving the elasticity of the stick was the invention of the elder Tourte.[6]

Boyden confirms that the screw mechanism "must have been invented in the last years of the seventeenth century."[7] In the first half of the eighteenth century, both screw mechanism and crémaillière were in use. Tourte inherited the device of the screw mechanism from his predecessors and used it in his bows.

It is difficult to play a long cantabile line of melody with a pre-Tourte bow because of its construction characteristics. Boyden writes:

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[4]Roda, 45.

[5]See Curry's translation of Fétis' article from Biographie Universelle des Musicians. Curry, 40.

[6]Henry Saint-George, The Bow, Its History, Manufacture and Use (London: The STRAD Library, 1896; reprint, NY: Broude Brothers, 1969), 35.

[7]Boyden, History, 209.

> The "old" bow is more difficult to control in its upper third in a drawn-out cantabile, and, being lighter, shorter, and using a narrower ribbon of hair, the "old" bow is not able to sustain the singing phrase with as much power or with as long a bow stroke as the modern bow.[8]

However, it is easier to play detached notes with clear articulation, using the pre-Tourte bow, especially in the upper third of the bow. The pre-Tourte bow can produce a crystal-clear spiccato sound without actually bouncing. Boyden points out: "And today we know from surviving bows that they are superior in some respects to the modern bow when used for playing music of their own time."[9]

After a long period of evolution, the perfected Tourte bow emerged around 1785. Some of the advanced features of the Tourte bow had appeared before Tourte finalized his design, and some bows even had more than one of these advanced features, but none had all of them. It was Tourte who put all the advanced features, both those already existing and those he invented, into one bow. About the Tourte bow, Boyden writes:

> Tourte's bows, works of art in themselves, were so perfectly adapted to the music of his and subsequent times that the Tourte bow is a synonym for the modern bow, and has been for nearly two hundred years. His bows were universally imitated

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[8]Boyden, History, 208.

[9]Boyden, "Violin Bow," 200.

> as the perfect model. They have never been surpassed.[10]

The Tourte bow had more responsiveness than the pre-Tourte bow, and unlike the early model, which had a "yielding" or "give" quality, it produced its tone immediately at the beginning of each stroke. It also maintained its full tone evenly almost to the end of the stroke, and only a small amount of additional pressure was needed at the point to give the effect of a dynamically sustained bow stroke. With the change in bow construction, ways of holding and manipulating the bow changed. Use of a different bow required a different technique. Babitz compares the pre-Tourte bow and Tourte bow:

> The early bow when played with a modern grip and technique has a hard, forced quality; the modern bow when played with the early technique sounds whistling and characterless--each suffers when incorrectly used.[11]

Curry also discusses the characteristics of the Tourte bow in his dissertation. He summarizes:

> [The Tourte bow] 1) had a capacity to execute a more massive tone; 2) had the capability to sustain phrases for a longer duration of time on one bow stroke; 3) had the capacity for stronger accentuation, especially in the upper part of the bow; 4) could be much more reliably controlled in spiccato passages of medium to

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[10]Boyden, History, 328.

[11]Babitz, "Differences," 34.

> fast tempos; 5) had greater capabilities for all of the uncontrolled bouncing bow-strokes; and 6) had the capability for a much smoother bow change.[12]

The Tourte bow provided new performing capabilities for violinists. New strokes, such as the martelé and modern spiccato or sautillé, developed during the nineteenth century. It was inevitable that changes in bowing technique would complement these developments.

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[12]Curry, 55.

CHAPTER III

SELECTED VIOLIN SCHOOLS

This writer has selected nine pedagogues as representatives of their times, based on their significance in the world of violin teaching. The purpose of this chapter is to document the significance and influence of these pedagogues, and to sketch the background of their treatises. The content of the particular treatises is discussed in detail elsewhere in this dissertation.

The Eighteenth Century: Italian, German, and French Schools

The treatises of Geminiani, L. Mozart, and L'Abbé le fils are the peak of two and a half centuries, prior to their publication, of evolving violin-playing technique. They are also a response to new trends in violin playing. In these treatises, there are indications of new developments in bowing technique, in a period which saw the transition of bow construction from the pre-Tourte bows to Tourte's modern version.

Geminiani: The First Important Work

Francesco Geminiani was one of the greatest violin virtuosos, a productive composer, and a highly influential teacher in his time. In 1748, he published his first

treatise, Rules for Playing in a True Taste, followed by a series of treatises published in the next decade. Among these, the most famous and most influential was The Art of Playing on the Violin. The date of this treatise was, like Geminiani's birth date, not clearly documented. However, Boyden asserts that its date is 1751.[1] Although Geminiani moved to England at age 27 and published his treatise in English, his treatise presented the tradition of the Italian school, as pointed out by Boyden:

> . . . from a historical point of view, Geminiani's tutor is the first important work that gives an insight into the traditions of the Italian school of violin playing, in particular that inspired by Corelli, Geminiani's teacher.[2]

In this treatise, in addition to the text, Geminiani offered twenty-four exercises which he called "Examples" dealing with technical problems, and twelve "Compositions" in different styles for violin, violoncello, and harpsichord. In certain aspects his techniques were limited; for example, he did not mention the use of harmonics or trills in thirds. On the other hand, he

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[1]Boyden, "Geminiani," 161-70; and "A Postscript to 'Geminiani and the First Violin Tutor'," Acta musicologica 32 (1960), 40-47.

[2]Boyden, "Geminiani," 162.

presented advanced techniques, such as his fingering for chromatic scales.

After its publication, numerous reprints, translations, and imitators of The Art of Playing on the Violin appeared. It was greatly influential in its time.

Mozart: A Pedagogue in His Own Right

Leopold Mozart is not only the father of Wolfgang Amadeus, he also stands out in music history as a distinguished musician and pedagogue in his own right. He published A Treatise on the Fundamental Principles of Violin Playing (Versuch einer gründlichen Violinschule) in July, 1756, six months after the birth of Wolfgang Amadeus. It was in wide circulation in the eighteenth century, and several editions and translations appeared during Mozart's life time. Its popularity declined after 1800. Stowell explains:

> . . . by which time [1800] many of Mozart's technical principles were outdated and suited neither to the demands of the more advanced music of the period nor to the characteristics of the Tourte bow.[3]

However, there are many Mozart's principles, such as his viewpoint on the sounding point in tone production, which are still valid even today. More important, this treatise provides detailed and thorough information about techniques

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[3]Stowell, Violin Technique, 9.

and aesthetic matters in violin playing of his time. It remains a significant source of information on violin playing.

L'Abbé le fils: A Forerunner of the Modern Era

L'Abbé le fils, also known as Joseph-Barnabé Saint-Sévin, was a child prodigy and one of the most noted violinists of the mid-eighteenth century. He was also an accomplished composer and the author of Principes du violon (1761), which is a treatise of major importance to violin pedagogy. Compared to Mozart's treatise, Principes du violon offers less verbal information and is less systematic, being more a study book with an introduction and brief instructions on certain lessons. However, it reveals some advanced techniques, such as the use of artificial harmonics, which foreshadow modern concepts of violin playing. Boyden writes:

> The treatise of L'Abbé le fils, in fact, marks the beginning of the leadership of the French school during the following century, and it forecasts the shape of things to come by its advanced precepts . . ..[4]

L'Abbé le fils' treatise reflects the changes in violin playing which occurred as early as the mid-eighteenth century, and it stands with treatises of Geminiani and

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[4]Boyden, History, 365.

Mozart as one of the most important sources of information on violin playing of its time.

The Nineteenth Century: French and German Schools

Baillot and Spohr are important representatives of the nineteenth century. They witnessed the transition from the Classic period to the Romantic, and their method books were among the earliest books assuming the use of the Tourte bow. They began a new era, not only of violin playing but also of pedagogical thought, being among the first great masters to set forth theories of the physical principles of playing the instrument.

Baillot: Founder of the Nineteenth-Century French School

Pierre Marie François de Sales Baillot was acclaimed by Berlioz, Mendelssohn, and Spohr as one of the greatest and most popular violinists of his time.[5] He was a member of the triumvirate, including Rodolphe Kreutzer (1766-1831) and Pierre Rode (1774-1830), which established the nineteenth-century French violin school. As a trio, they published Méthode de violon in 1803 while all serving on the faculty of the Paris Conservatoire. Baillot may be less familiar to twentieth-century musicians than his two colleagues, whose

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[5]See Svi Zeitlin's "Foreword," in P. M. F. de Sales Baillot, The Art of the Violin, ed. & trans. by Louise Goldberg (Evanston, IL: Northwestern University Press, 1991), ix.

studies, caprices, and other musical works are to this day indispensable in the training of violinists, but he took a prominent part in the writing of Méthode de violon which he later called "an experiment."[6] In 1834, Baillot published another book, The Art of the Violin (L'art du violon). This work surpassed the previous work, remedying such omissions as the lack of discussion on elasticity in bow strokes. It also supplied much more detailed information about violin playing. Baillot wrote about this work:

> We have therefore entirely revised that work [Méthode de violon], although the fundamental principles of the first Method have been retained. We have tried to add to it by discussing a large number of new subjects which have not, at least to our knowledge, previously been applied to the study of the violin.[7]

The French violin school exerts great influence on violinists of following generations. Zvi Zeitlin, professor of violin at the Eastman School of Music, states in the Foreword of the English edition (1991) of The Art of the Violin: "Practically all good violinists can trace their origins back to one or more of the French Fathers."[8] Baillot's The Art of the Violin serves as a major voice of the French school. It summarizes the theories and

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[6]Baillot, The Art, 5.

[7]Baillot, The Art, 5.

[8]Baillot, The Art, x.

principles on which are based Baillot's works and those of Kreutzer and Rode, and is of major significance for any study on violin playing of the French school.

Spohr: Founder of the Nineteenth-Century German School

Spohr was one of the leading violinists and composers of the early Romantic period. He published his Violin School (Violinschule) in 1831, which established his importance as a teacher. Among his numerous students, Ferdinand David, Hubert Ries, and his grandson August Wilhelmj--all outstanding violinists--were the most famous.

The Violin School was written as a guide for teachers rather than for self-instruction. As Spohr wrote in the introduction, it progresses from "the first rudiments of music" to "the highest refinement in violin playing." It is divided into three parts: general information about the violin, playing techniques, and performance style. In certain aspects it reveals a conservative viewpoint. For example, Spohr objected to the "thrown" bowings employed by Paganini and preferred a more "classical" on-the-string bowing technique. However, this method book provides significant information on early nineteenth-century practices of violin playing.

The violin playing technique continued its development during the nineteenth century. The development was best summarized by the writings of Auer and Flesch.

The Twentieth Century: Tradition and New Direction

In the first half of the twentieth century, the Russian violin school, of which Auer was a leader, exerted great influence on violin playing. Flesch, also an advocate of the Russian school, synthesized the traditions of the previous one and a half centuries, and his research and writing are still influencing today's violin teaching. In the second half of the twentieth century, pedagogues have explored new ideas in violin teaching. Their teaching concerns not only the movements of the fingers, hand, and arm, but also mental control and total body action. Of the later twentieth-century pedagogues Galamian and Rolland are important representatives.

Auer: The Russian School

Hungarian violinist and teacher Leopold Auer received his early training at the Budapest Conservatory. Later, he studied in Vienna with J. Dont, who Auer said laid his technical foundation. Auer succeeded Wieniawski as violin professor at the St. Petersburg Conservatory in 1868 and remained there until 1917. During his tenure at St. Petersburg, Auer exerted a decisive influence on the Russian

violin school. The achievements of his students are the best evidence of his teaching: world-renowned violinists Heifetz, Zimbalist, and Elman are among his foremost students.

Auer published Violin Playing as I Teach It in 1921. In its pedagogic perspective, it moves a step beyond Spohr. It is not simply addressed to teachers, but is a discussion of the art of teaching; and it reveals some of Auer's own strategies for teaching. It explains the mechanical means and technical procedures which he used in developing his students. He himself wrote confidently about this book: "My advice, my conclusions, are all the outcome of my experience. They have all been verified by years of experiment and observation."[9]

Flesch: Twentieth-Century Synthesis

Carl Flesch, also a native of Hungary, was an internationally acclaimed violinist and teacher. His most important publication was the two-volume The Art of Violin Playing (Die Kunst des Violin Spiels), published respectively in 1923 and 1928 (English edition in 1924 and 1930). He wrote that this work was "not meant to be a 'school of violin-playing' in the current meaning of the term" and that it was "broadly conceived, from the pedagogic

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[9]Leopold Auer, Violin Playing as I Teach It (New York: Frederick A. Stokes Company, 1921), v.

standpoint . . . on the basis of the most modern acquisitions in the domain of violin technique."[10] His method was developed from those of Kayser, Kreutzer, Gavinies, Fiorillo, Rode, Sevicik, and others. It thus draws upon pedagogic traditions of the previous one and a half centuries and partakes of German, French, Italian, and Russian schools. It is a twentieth-century summary of the various schools which formed the mainstream of violin teaching.

Max Rostal writes in the Foreword of Carl Flesch's Memoirs:

> It is a well-known and undisputed fact that the high standard of violin playing of today is absolutely unthinkable without the powerful and lasting influence which Carl Flesch exercised through his researches, writings and teaching.[11]

Carl Flesch exerted a prominent influence upon twentieth-century violin playing. Among his students were acclaimed violinists Roast, Goldberg, and Szeryng, to name a few. The Art of Violin Playing, although published more than sixty years ago, is still of great value to violinists.

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[10]Carl Flesch, The Art of Violin Playing (New York: C. Fischer, Inc., 1924-30), 2 vols, 1:3.

[11]Carl Flesch, The Memoirs of Carl Flesch (New York: The Macmillan Co., 1958), vii.

Galamian: The Controlling Mind

Ivan Galamian was born in Persia, of Armenian parents. After his six-year study in Moscow, he studied with Lucien Capet at Paris for a year. He taught at several schools including the Curtis Institute, the Juilliard School, and his own Meadowmount School for string players. His success as a teacher was outstanding. His students include such world-renowned virtuosos as Perlman and Zukerman, as well as concertmasters, leaders of chamber groups, and violin professors at music schools. He is known as one of the foremost teachers of the twentieth century.

Galamian's ideas and principles were the basis of Principles of Violin Playing & Teaching (1962).[12] It is a summary of more than forty years of Galamian's teaching.

Galamian's teaching was analytical and rational, and he emphasized mental control in violin playing. The key to complete mastery of violin technique is to be found, he believed, in the relationship of mind to muscles, that is, in the ability to make the sequence of mental command and physical response as fast and as precise as possible.[13]

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[12]The text was written by Elizabeth H. Green, music professor at the University of Michigan.

[13]Ivan Galamian, Principles of Violin Playing & Teaching (Englewood Cliffs, NJ: Prentice-Hall, Inc., 1962), 5.

Therein resides Galamian's fundamental principle of violin technique.

Galamian believed that the very best method a teacher could use in teaching a student was an individualized, unique approach. He rejected the enforcement of rigid rules in teaching. He admitted that his method was not the only right or only possible one, but asserted that his teaching system was the "most practical" one.[14]

Rolland: Total Body Action

Paul Rolland was a native of Hungary and was educated at the Franz Liszt Academy of Music in Budapest. He played professionally with the Budapest Symphony and the Lener String Quartet. Later he decided to make teaching the major part of his career. As a professor at the University of Illinois, he conducted a string research project, lasting from 1966 to 1971, which was supported by the U. S. Office of Education. The results of the project were documented in the book The Teaching of Action in String Playing and seventeen color films which cover topics of string instruction for the first two years of study, ranging from holding the violin to shifting, vibrato, and spiccato. They reflect his teaching methods.

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[14]Galamian, vii.

Rolland's approach to string teaching emphasized rhythmic foundation and movement free from excessive tensions. His aim was to emancipate the body from any tension in the motions of violin playing. Kredel quotes Gerard Fischbach, who was one of Rolland's colleagues, "No one in the world understood as well as he the possibilities of the human body as a violin-playing machine."[15]

Rolland called his idea "total body action." In contrast with conventional string teaching which is usually limited to the isolated movements of the fingers, hands, and arms without much concern for the attitude of the body as a whole, Rolland emphasized the importance of the whole body in the performance of violinistic skills. Rolland believed that well-balanced and relaxed body movements could help to improve violin playing.[16] His method, acclaimed as being revolutionary in nature,[17] is a significant contribution of the twentieth century.

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[15]Nancy Kredel, "Paul Rolland, Teacher of Teachers," The Strad 89 (1979): 1025-26.

[16]Paul Rolland, The Teaching of Action in String Playing, revised edition (NY: Boosey & Hawkes, Inc., 1986), 32.

[17]Rolland, 2.

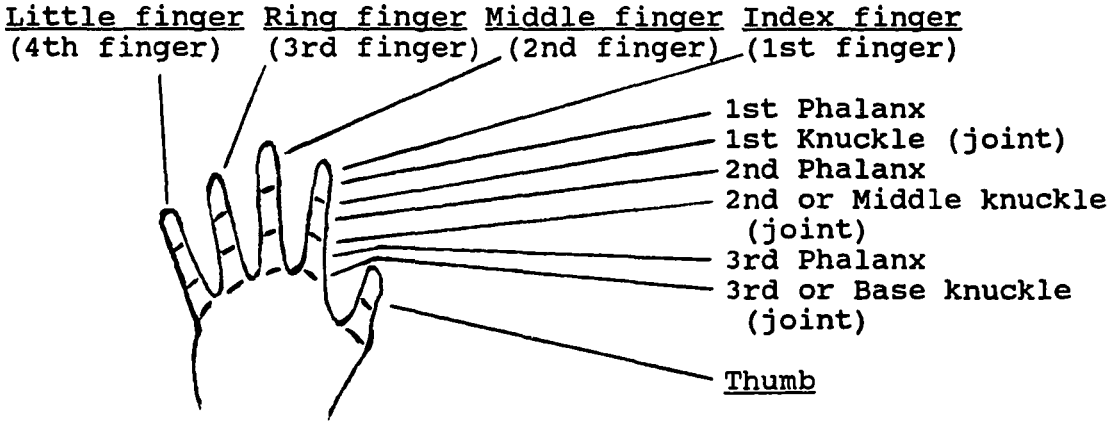
CHAPTER IV

HOLDING THE BOW

The history of violin playing reveals that there are many ways to hold the bow. The various methods of holding the bow reflect the influence of changes in the construction of the bow, of changes in musical trends, and of personal performing styles. Clearly, the manner of holding the bow will affect the execution of bow strokes.

The placement of the thumb and fingers and their use are the main concern in a discussion on holding the bow. To ensure clarity in discussion, the physiological terminology shown in the following figure is used in this dissertation.

Fig. 1: Physiological terminology of the hand.



The Eighteenth Century

The eighteenth-century violinists using pre-Tourte bows held the bow at different points on the stick. Some, such as Geminiani, held the bow at a distance from the frog; others, such as L. Mozart, placed the hand at the frog. Because the hand positions were different, the way they used their fingers differ. The Geminiani style emphasized the use of the index finger, whereas violinists using Mozart's method paid more attention to the little finger.

Geminiani: High Hand Position

Geminiani describes his bow hold in The Art of Playing on the Violin:

> The Bow is to be held at a small Distance from the Nut, between the Thumb and Fingers, the Hair being turned inward against the Back or Outside of the Thumb, in which position it is to be held free and easy, and not stiff.[1]

According to this description, the hand is at "a small distance" from the frog, not, as with the modern bow grip, at the frog; but Geminiani does not describe exactly the size of the "small distance." Boyden examines the frontispiece of the French edition of Geminiani's treatise and concludes in his introduction to the facsimile edition

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[1]Francesco Geminiani, The Art of Playing on the Violin, facsimile edition, (London: Oxford University Press, 1952), 2.

of The Art of Playing on the Violin that "the hand [is] at a considerable distance from the nut of the bow."[2] Figure 2 shows Geminiani's hand position:

Fig. 2: Boyden, History, Plate 36.

The way Geminiani holds the violin may have affected his choice of where to hold the bow. He holds the violin "below the Collar-bone" and "against the Breast."[3] If a violinist holds the violin in this way and holds the bow at the frog, the violinist may not be able to use the point of the bow, because the violin is positioned lower and more to the right than when held in the modern way. Geminiani's method of holding the bow enables violinists who hold the violin in his manner to use the tip of the bow. However, the bow strokes cannot be very long because the part of the bow between the hand and the frog is not suitable for use.

Geminiani does not explain how the fingers should be placed in relation to the thumb and does not mention the

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[2]Geminiani, The Art, vii.

[3]Geminiani, The Art, 1-2.

little finger's position. Since he holds the bow at a distance from the frog and the balance point of the bow he uses is closer to the frog than that of the Tourte bow, his hand is near the balance point, and therefore the role of the little finger in balancing the tip of the bow is not very important. The index finger is more important because, as Geminiani writes, the bow "must be pressed upon the Strings with the Fore-finger only, and not with the whole Weight of the Hand."[4] When the hand is placed at a higher position on the bow, the relative weight of the tip of the bow becomes smaller and more finger pressure is needed in tone production. As for the contact place of the index finger, Boyden points out, by examining the frontispiece, that "the index finger . . . grasps the bow at the first joint."[5]

According to Geminiani's description, the bow is "to be held free and easy, and not stiff." This may imply that the fingers should be bent, because if the fingers are straightened, it is unavoidable that the hand becomes stiff. From Geminiani's description it is clear that when the bow is used the stick tilts toward the fingerboard; this is indicated by "the Hair being turned inward against the Back or Outside of the Thumb."

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[4]Geminiani, The Art, 2.

[5]Geminiani, The Art, vii.

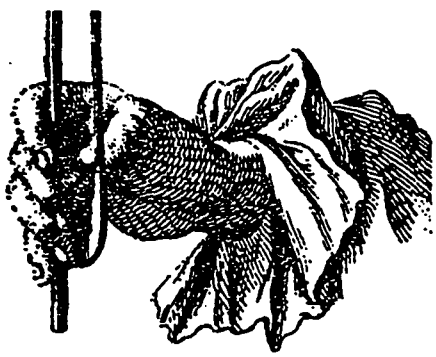
Mozart: Holding the Bow at the Frog

Mozart gives a more detailed description of the bow hold in A Treatise on the Fundamental Principles of Violin Playing:

> The bow is taken in the right hand, at its lowest extremity, between the thumb and the middle joint of the index-finger, or even a little behind it. . . . The little finger must lie at all times on the bow, and never be held freely away from the stick, for it contributes greatly to the control of the bow and therefore to the necessary strength and weakness, by means of pressing or relaxing. . . . The first, namely, the index-finger, must however not be stretched too far over the bow or too far from the others. One may, at times, hold the bow with the first or second joint of the index-finger, but the stretching out of the index-finger is at all times a serious error.[6]

It may be assumed that Mozart holds the bow at the frog as he writes that "at its lowest extremity." This assumption is confirmed by the illustration in his treatise (Fig. 3).

Fig. 3: Mozart, 59.



[6]Mozart, 58.

The lower hand position, compared with Geminiani's, may be a result of a different violin position. Instead of holding the violin "below the collar-bone" and "against the breast," Mozart holds the violin "against the neck so that it lies somewhat in front of the shoulder and the side on which the E (thinnest) string lies comes under the chin."[7] Compared to Geminiani's position, the violin is higher and more to the left. This position allows a violinist to hold the bow at the frog and still be able to use the point of the bow.

The point of both Geminiani's and Mozart's bow is lighter than that of the modern bow. However, because of Mozart's low hand position, the distance from the hand to the point of the bow is longer than that in Geminiani's case and thus the relative weight of the point of the bow is increased. In balancing the increased weight, especially when playing in the lower part of the bow, the little finger plays an important role. That is why Mozart emphasizes the little finger's function over the index-finger's pressure, which is Geminiani's focus.

There is a question about Mozart's statement that the bow is held "between the thumb and the middle joint of the index-finger, or even a little behind it." If the bow is held between the thumb and the index-finger, it is impossible for the index-finger to exert any pressure

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[7]Mozart, 54.

because such pressure will be offset by the thumb. Furthermore, the illustration in his treatise (Fig. 3) shows clearly that the thumb is not opposite the index finger but the middle finger. It is unclear under what conditions Mozart makes his statement. He might possibly have been thinking about using the weight of the whole hand instead of pressing with the index finger. If so, then his technique is quite different from that of Geminiani, who writes that the bow must be pressed "not with the Weight of the whole Hand."

Another difference between Mozart's and Geminiani's bow hold is that Mozart placed the bow "more straight than sideways on the violin"[8] while Geminiani let the bow tilt toward the fingerboard. Mozart writes:

> . . . in this way more strength is gained and the error avoided of which some are guilty, who play with the bow so much on the side of the hair that they, when pressing even slightly, play more with the wood than with the horse-hair.[9]

L'Abbé le fils: Forerunner of the Modern Bow Hold

L'Abbé le fils agrees with Geminiani about the inclination of the bow. He recommends that "When placing the bow on the string, the stick should not be

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[8]Mozart, 60.

[9]Mozart, 60.

perpendicularly above the hair, but must be inclined slightly towards the fingerboard."[10] Stowell considers that L'Abbé le fils' recommendation is a "significant advance," while actually Geminiani had made a similar suggestion ten years before L'Abbé le fils published his method book.

Stowell comments that L'Abbé le fils' bow grip foreshadows "modern concepts." He translates the following quotation from L'Abbé le fils' method book, Principes du violon:

> The end of the little finger should be placed on the part of the bow fastened to the frog; the index-finger should be placed in such a way that the bow is in contact with the second joint of this finger, which, in order to gain greater power, must be slightly separated from the others. The thumb should be opposite the middle finger and must take the full weight of the bow.[11]

The fact that the index finger contacts the bow stick at the second joint anticipates the modern practice. In the twentieth century, Auer invents a bow hold in which the contact point of the index finger is at the second joint. This kind of bow hold is the so-called Russian manner which will be discussed later. In Mozart's bow hold, the contact point of the index finger is also at the second joint, or "even behind it," but his index finger may be, according to

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[10]Stowell, Violin Technique, 66.

[11]Stowell, Violin Technique, 59.

his writing, opposite the thumb, a manner not seen in the modern bow hold. In contrast to Mozart's opposite-the-index-finger thumb position, L'Abbé le fils puts the thumb opposite the middle finger. L'Abbé le fils does not mention whether the thumb should be at the frog or not, whereas both Geminiani and Mozart provide this information. However, from L'Abbé le fils' description of the position of the little finger, the thumb cannot be placed very far from the frog if it is not at the frog.

There are similarities between Mozart's bow hold and that of L'Abbé le fils. Both of them separate the index finger from the other fingers and place the little finger on the bow. L'Abbé le fils is more specific about the separation of the index finger than Mozart, as he writes that the separation is for gaining "greater power."

The Nineteenth Century

Baillot and Spohr used the Tourte bow, and in their bow hold the fingers were placed close together. It would seem that because the tip of the Tourte bow was heavier than that of the pre-Tourte bow, the index finger did not need to be separated from the other fingers to gain "greater power."

Baillot: Straight Thumb and Fingers

Baillot gives detailed instruction in his The Art of the Violin on how to hold the bow. He puts the thumb

"against the frog so that it touches it a little at its upper extremity," uses the fleshy part of the thumb to hold the bow, and lets the thumb's tip extend "beyond the stick by about .18 inch."[12] The player should not bend the thumb and "the thumb's tip is opposite the line between the middle and third fingers."[13] Baillot believes that his thumb position endows the thumb with more strength to grip the bow.[14]

Baillot instructs students that the index finger should not be separated from the other fingers and the stick of the bow should be placed on the second phalanx of the index finger.[15] He does not mention the position of the little finger, only giving a general description of finger placement. He writes: "Support the bow with all the fingers, the hand rounded naturally, and the fingers placed on the stick without being either bent or extended."[16] From the drawing in his book, it can be seen that the fingers are essentially straight and bent at the base knuckles (Fig. 4).

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[12]Baillot, The Art, 21.

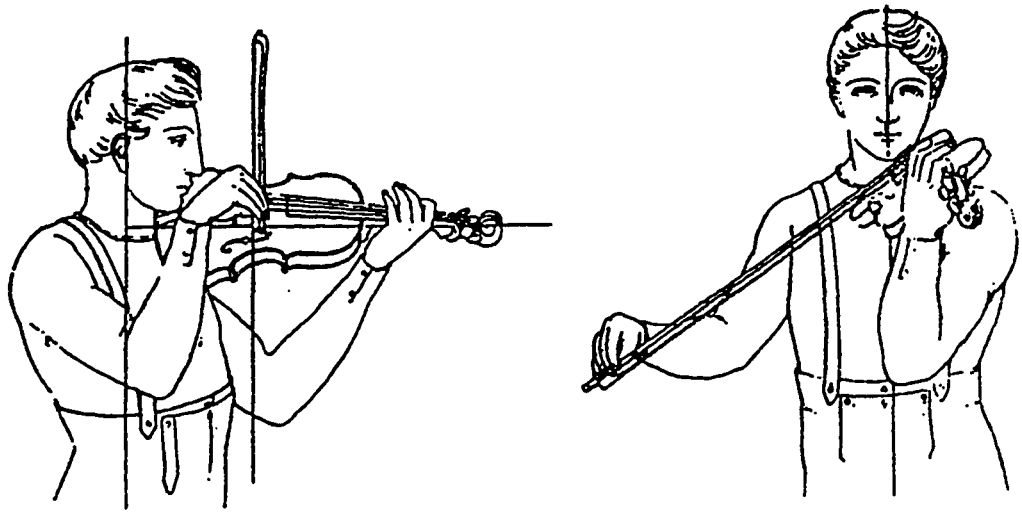
[13]Baillot, The Art, 21.

[14]Baillot, The Art, 21.

[15]Baillot, The Art, 21.

[16]Baillot, The Art, 21.

Fig. 4: Baillot, The Art, Plate IIa.



It is also clear that the fingers are close together. This conforms to Baillot's description that the index finger is not separated from the others. The fingers seem to touch the stick of the bow at their first knuckles or even at the first phalanxes. This differs from Baillot's instruction that the stick should be "on the middle of the second phalanx of the index finger." Regarding this difference, Baillot's writing is perhaps more reliable than the drawing, because the drawing may not be an exact reflection of his ideas. Baillot does not specify the little finger's position. He just gives a general instruction that the four fingers are placed "on the stick."[17]

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[17]Baillot, The Art, 21.

The straight thumb and fingers in Baillot's bow hold distinguish him from other pedagogues. With such a bow hold, the finger motions in executing bow strokes, if any, are limited to a minimum. Baillot's thumb is opposite the line between the middle and third fingers; thus his hand position is a little higher than in the case of the thumb-opposite-the-middle-finger bow hold. In this higher position, the index finger can exert greater pressure on the string than in the lower position.

Spohr: Fingers Close Together

Spohr describes his bow hold in his Violin School:

> The bow is held with all five fingers of the right hand. . . . The thumb is bent, and its point placed against the stick of the bow, close to the nut, and opposite the second finger, which, with the first finger, encompasses the stick, so that it rests in the hollow of the first joint of each.
>
> The other two fingers are placed loosely on the stick, and the points of the four fingers drawn close together. An elegant, curved position is given to the hand, in which none of the knuckles project forward.[18]

There are several differences between Spohr's bow hold and Baillot's. First, Spohr states that the thumb is bent while Baillot advises not to bend the thumb. Second, Spohr uses the thumb's point, or tip, to hold the bow while Baillot uses the "fleshy part." Third, Spohr holds the bow

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[18]Louis Spohr, Violin School, trans. by John Bishop (London: R. Cocks, 1843), 13.

at the first joints of the fingers, resembling the drawing in Baillot's book but differing from Baillot's writing, which indicates that the stick of the bow is placed on the "second phalanx of the index finger." Fourth, Spohr places the thumb opposite the second finger and Baillot puts the thumb between the second and third fingers.

Although there are specific differences between Spohr's bow hold and Baillot's, there are also similarities. Both of them put the fingers close together. Spohr writes that the points of the four fingers are drawn close together; Baillot's instruction is that the index finger is not separated from the other fingers. Neither of them specifies the position of the little finger, only instructing generally that the little finger is placed on the bow; nor do they mention its function as does Mozart. One reason for them to pay less attention to the little finger may be that they use fewer lifted bow strokes and more on-the-string strokes, in which the little finger plays a less important role than in the lifted strokes.

The Twentieth Century

The early twentieth century saw the major influence of the Russian manner of holding the bow, which was developed by Auer and advocated by Flesch. In the Russian bow hold, the index finger contacts the bow at the second joint. The pedagogues of the second half of the twentieth century

recommended a natural approach to emancipate the hand from any stiffness. In their basic bow hold, the index finger contacts the bow at the second phalanx.

Auer: Philosophy and the Russian Manner

Auer does not describe his bow hold, but gives his philosophic idea about holding the bow in his Violin Playing as I Teach It:

> I myself have found that there can be no exact and unalterable rule laid down indicating which one or which ones of the fingers shall in one way, or another grasp and press the stick in order to secure a certain effect. Pages upon pages have been written on this question without definitely answering it. I have found it a purely individual matter, which it is impossible to analyze or explain mathematically. Only as the result of repeated experiment can the individual player hope to discover the best way in which to employ his fingers to obtain the desired effect.[19]

Auer uses three examples, Joachim, Ysaye, and Sarasate, to reinforce his theory. According to Auer, Joachim holds the bow with his second, third and fourth fingers and with his first finger often in the air. In contrast, Ysaye holds the bow with his first three fingers and his little finger raised in the air. Sarasate keeps all his fingers on the stick.[20] Auer indicates that "every great violinist of the close of the last century had each his own individual manner

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[19]Auer, 36.

[20]For Auer's description, see Auer, 37.

of holding the bow, since each one of them had a differently shaped and proportioned arm, muscles and fingers."[21]

Auer develops his own bow hold, the so-called Russian manner, based on "physical and mental laws." Dorothy DeLay indicates that Auer, a small man under five feet tall, invented his bow hold to be able to reach the bow tip with his tiny arms.[22] According to DeLay, Auer does not follow his own theory of individualized technique in his teaching. She writes that Auer "was so delighted with this [bow grip] that he taught it to all his students even those who had longer arms and didn't need the new grip."[23]

Flesch depicts Auer's bow hold in The Art of Violin Playing:

> The index finger touches the stick at the line separating the second from the third joint,[24] and in addition embraces it with its first and second joints. There is a very small interval between the index and middle finger. The index finger assumes the guidance of the bow, and the little finger only touches it at its lower half while playing. The bow-hairs being slack, the stick held straight.[25]

Flesch views Auer's bow hold as the most advantageous one, because "with this way of holding the bow the greatest

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[21]Auer, 36-7.

[22]Dorothy DeLay, "Random Thoughts about Teaching," American Suzuki Journal 20/3 (May, 1992): 25.

[23]DeLay, 25-6.

[24]Flesch used the term "joint" for "phalanx."

[25]Flesch, The Art, 1:51.

tonal results are attainable with a minimum development of strength."[26] However, 68 years after Flesch published his book, DeLay gives a different opinion:

> With that bow grip the player lost quite a big [*sic*] of flexibility, and so in recent times it has been for the most part abandoned. The pendulum has swung back to the Franco-Belgian grip. There are not too many variations possible.[27]

Flesch: Advocate of the Russian Manner

Flesch prefers the Russian manner of holding the bow, as has been mentioned. In addition to the Russian manner which he calls "the newest manner," he also discusses two other methods which he calls "the older (German) manner" and "the newer (Franco-Belgian) manner."

Flesch compares these three types of bow hold and points out that the main difference among them is the position of the contact point of the index finger with the bow. In the German manner, the contact point is at the first knuckle; in the Franco-Belgian manner, it is at the second phalanx close to the second knuckle; and in the Russian manner, it is at the second knuckle.[28] In other words, the hand position in relation to the bow becomes deeper and deeper. Because of different contact points,

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[26]Flesch, The Art, 1:51.

[27]DeLay, 26.

[28]For Flesch's discussion, see Flesch, The Art, 1:51-54.

different force is required for tone production with each of these three grips. Flesch asserts that the Russian manner requires the least force and thus is the best.[29]

Flesch discusses the functions of the thumb and fingers, and asserts that the thumb should be at a position between the first and second fingers:

> It [the thumb] is most appropriately rested, half against the edge of the nut, half against the stick. To all appearances it lies opposite the middle finger; yet this opposition is only apparent, for if we raise the nail-joints of the first and second fingers we will find that the thumb, in reality, lies between them.[30]

Flesch also indicates that the function of the thumb is to provide a counterpart to the pressure exerted on the stick by the fingers. If the thumb's position is at a distance from the nut, the tone is "quantitatively insufficient;" if the thumb is at the indentation of the frog, the tone is "crude."[31]

Because of the unequal distribution of the weight of the bow, the first finger and little finger have different functions. Flesch characterizes the function of the first finger as "tone-producing;"[32] that is, the first finger puts

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[29]Flesch, The Art, 1:51.

[30]Flesch, The Art, 1:53.

[31]Flesch, The Art, 1:53.

[32]Flesch, The Art, 1:53.

pressure on the bow stick at the point to set the strings vibrating. He describes the function of the little finger as "tone-preventing;"[33] that is, the little finger offsets the weight of the bow at the frog to prevent a crude tone.

Galamian: Variable Bow Hold

Galamian describes his bow hold in Principles of Violin Playing and Teaching. According to him,[34] the thumb-tip is at such a place that it can contact both the stick and frog and is opposite the middle finger. The index finger is placed at a slight distance from the middle finger and contacts the bow at a point close to the second joint, between the first and second joints. The middle finger contacts the stick at the first joint and the ring finger reaches over the frog. The tip of the little finger rests on the inner side of the octagon of the stick, the flat surface just next to the top. There should be a slight distance between the fingers. According to Galamian, this kind of bow hold is "the basic or neutral grip."[35] In his opinion, the bow hold is not an immutable or changeless thing. He advises:

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[33]Flesch, The Art, 1:53.

[34]For Galamian's description of bow hold, see Galamian, 45-47.

[35]Galamian, 45.

> . . . in actual playing this position of the bow hand is not a fixed or invariable thing, but rather, . . . it is subject to constant modification as the bow moves from one end to the other and as the player changes his dynamics, bowing styles, and tonal qualities.[36]

Galamian gives two examples of sound effects for which the hand needs to adjust its position.[37] For a transparent sound, the first finger moves more toward its base knuckle in its point of contact with the stick, and the other fingers come slightly off the stick. For a robust sound, the index finger moves away from the middle finger slightly and contacts the stick more tightly.

Galamian emphasizes that the hand position should be "natural." A natural manner of holding the bow is "designed chiefly to release the springs of the hand and fingers so that the bow can settle deeper into the strings."[38] Furthermore,

> The "correct" bow grip must be a comfortable one; all fingers are curved in a natural, relaxed way, no single joint (knuckle) is stiffened; and the correctly resulting flexibility must allow all of the natural springs in the fingers and the hand to function easily and well.[39]

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[36]Galamian, 45.

[37]Galamian, 47.

[38]Galamian, 45.

[39]Galamian, 47.

This idea of natural hand position is similar to Auer's concept that the bow hold should be "based on physical and mental laws." However, in terms of the contact point of the index finger, Galamian's basic hand position is of the Franco-Belgian manner, not Auer's Russian manner.

Rolland: A Natural Approach

Rolland advocates a bow hold similar to Galamian's:

> The bow should be held in a natural fashion. When the arm is resting at the side, the relaxed fingers are in an almost perfect position for holding the bow. The hand and fingers are gently rounded, as if holding a ball. The good bow hand does not deviate radically from this natural position.[40]

According to Rolland, the thumb is bent and the tip of the thumb contacts both the stick and the frog.[41] The thumb and the middle finger form an axis which is the supporting point of the bow hold. The first knuckle of the middle finger contacts the stick. Rolland does not mention the contact point of the index finger, only giving instructions that the index finger should bend around the bow. But from the pictures he uses to illustrate the bow hold,[42] it is clear that the contact point is at the middle phalanx. This

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[40]Rolland, 80.

[41]For Rolland's description of bow hold, see Rolland, 80-84, and 88-89.

[42]Rolland, 81 and 84.

position is similar to Galamian's basic bow hold and to the Franco-Belgian bow hold. The first phalanx of the third finger is placed on the far side of the stick and the tip of the little finger is placed on the inner angled surface of the bow as advocated by Galamian.

Rolland divides the bow hold into two parts: the front part consisting of the thumb, first, and second fingers; and the back part consisting of the thumb, second, third, and fourth fingers. The front part plays an important role in applying pressure on the bow when approaching the tip, or when playing a crescendo, forte, or accents. The back part supports the bow when approaching the frog, or when playing a diminuendo, piano, or lifted bows. The functions of these two parts are similar to the "tone-producing" and "tone-preventing" functions mentioned by Flesch.

Summary

Much has been written about holding the bow, and these writings describe many different bow holds. An even greater variety of bow grip is found in the practice of different violinists. Table 1 provides the positions of the thumb and fingers in bow holds of the pedagogues cited in this dissertation. It demonstrates the differences and similarities between different methods of holding the bow.

There are two points defining the position of the thumb. One is the thumb position in relation to the bow;

the other, the thumb position in relation to the other fingers. In the eighteenth-century practice, the thumb was either at a distance from the frog, as Geminiani advocated, or touches the frog, as Mozart suggested. In the nineteenth and twentieth centuries, the thumb touches the frog. However, sometimes a modern violinist may hold the bow at a distance from the frog to achieve a special airy sound effect.[43] In most cases, the tip of the thumb contacts the stick. Occasionally, it can be found that the fleshy part of the thumb contacts the stick, as in Baillot's case. The thumb position in relation to the other fingers varies, according to different pedagogues, between the first and third fingers. Mozart may have put the thumb opposite the first finger and Baillot placed the thumb opposite the line between the second and third fingers. Others set the thumb opposite the second finger.

There are two considerations affecting the first-finger position: the contact point and the relationship to the second finger. The contact point of the first finger with the stick can be at the first knuckle, at the middle knuckle, or between the two.[44] Some pedagogues put the

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[43]This writer has witnessed such performances in concerts.

[44]Gaylord Yost discussed Spivakovsky's bow hold in The Spivakovsky Way of Bowing for Violinists and Violists (Pittsburgh, PA: Volkwein Bros., Inc., 1949). In Spivakovsky's bow hold, the contact point of the index

index finger close to the middle finger while others separate it from the other fingers.

The function of the index finger is different in various methods and reflects the influence of changes in the construction of the bow and in musical trends. Mozart and L'Abbé le fils separated the index finger from the second finger and let the index finger contact the bow at the middle joint. In this way the index finger could supplement the lighter point of their bow with necessary pressure needed in tone production. The early Tourte bow users, such as Baillot and Spohr, put the fingers close together in their bow hold and let the index finger contact the bow at the first joint (Spohr) or the second phalanx (Baillot). They felt no need for separating the index finger because the heavier point of their bow increases the bow pressure on the string. Later on, violinists such as Auer and Flesch separated the index finger again, and placed it at the middle joint on the bow. The weight of the bow itself was not enough for them to gain "the greatest tonal results," and thus they needed a bow hold in which the index finger can exert considerable pressure on the bow. Finally, pedagogues of the second half of the twentieth century advocate a natural approach. In their bow hold, the index

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finger is at the base knuckle. Nevertheless, this is a very rare case.

finger is also separated but the contact place is at the second phalanx instead of the second joint. This natural approach frees the hand from stiffness.

Writers have discussed the middle finger less than the thumb and index finger. The middle finger's position is determined by the thumb position. Usually, it is opposite the thumb. Twentieth-century writers, such as Rolland, recognize the middle finger's function, together with the thumb, as an axis of the bow hold.

The third finger has been the least discussed by writers. Some do not even mention it while others suggest that it should be placed "loosely on the stick" (Spohr) or "over the frog" (Galamian).

The little finger plays an important role since it is the balancing agent at one end of the "see-saw" of the bow hold, with the index finger at the other end and the thumb serving as the fulcrum. The importance of the little finger is recognized as early as Mozart's time. The little finger may or may not be placed at all times on the stick.

TABLE 1: HOLDING THE BOW

	Pre-Tourte Bow			Tourte Bow					
	The 18th Century			The 19th Century		The 20th Century			
	Geminiani	Mozart	L'Abbé le fils	Baillot	Spohr	Auer	Flesch	Galamian	Rolland
Thumb	At a distance from frog.	At frog.	At frog?	At frog; fleshy part touches bow; not bent; between 2nd & 3rd fingers.	At frog; tip touches bow; bent.	At frog.	At frog; opposite the line between 1st & 2nd fingers.	At frog; tip touches bow; bent.	At frog; tip touches bow; bent.
1st Finger	Grasp bow at 1st joint; the only agent to exert bow pressure.	Opposite thumb? Contact bow at middle joint, or a little behind it; not too far from other fingers.	Contact bow at middle joint; separated slightly from other fingers.	Contact bow at 2nd phalanx; not separated from other fingers; all fingers are not bent.	Contact bow at 1st joint; all fingers are close together.	Contact bow at middle joint; separated from 2nd finger.	Contact bow at middle joint; separated from 2nd finger.	Contact bow at 2nd phalanx, close to 2nd joint; slightly separated from 2nd finger.	Bend around bow. (No mention about contact point.)
2nd Finger		Opposite thumb?	Opposite thumb.	(See thumb.)	Opposite thumb; contact bow at 1st joint.		(See thumb.)	Opposite thumb; contact bow at 1st joint.	Opposite thumb; contact bow at 1st joint.
3rd Finger				(See thumb.)	Loosely on bow.			Reach over frog.	1st phalanx on the far side of bow stick.
4th Finger		Always on bow.	On the part of bow fastened to frog.	On the bow.	Loosely on bow.	Touch bow only while playing in lower part of bow.	Touch bow only while playing in lower part of bow.	On inner side of the octagon of bow stick.	On inner angled surface of bow.
Bow Inclination	Yes.	More straight than sideways.	Yes.	Yes.		Stick held straight.	Stick held straight.		

CHAPTER V

TONE PRODUCTION

The importance of the left hand on violin tone production is obvious. For example, intonation, vibrato, and finger articulation have direct association with tonal aspects. This dissertation, however, deals only with the techniques of the right hand thus precluding the aforementioned areas.

In comparison to the left hand, the role of the right hand is of principal importance in tone production, because tone quality depends on consistent, regular, and uninterrupted vibration of the string which is a direct result of bow action. A straight bow stroke produces a steady vibration of the string and therefore a good tone; however, a bow stroke lacking proper alignment with the string interrupts the regular string vibration, because the bow erratically changes its place and angle of contact with the string. In order to avoid this irregular vibration, the bow must be drawn along a line parallel to the bridge. This parallel movement is the foundation of good tonal production. Based on this foundation, there are three other essential factors influencing tone: the speed of the bow;

the pressure of the bow on the string; and the point of contact, or sounding point.

The Eighteenth Century

The eighteenth-century pedagogues cited in this dissertation did not fully explore the principles of tone production. Only Mozart considered the three main factors in his A Treatise on the Fundamental Principles of Violin Playing, yet even he did not provide a thorough coverage of the topic. Geminiani mentioned only bow pressure and L'Abbé le fils provided limited information on tone production.

Geminiani: Emphasizing Bow Pressure

Geminiani recognizes the importance of the right hand in tone production when he writes that "The Tone of the Violin principally Depends upon the right Management of the Bow."[1] He does acknowledge the fundamental importance of the straight bow movement, and indicates that differences in bow pressure could change the quality of sound. He writes:

> One of the principal Beauties of the Violin is the swelling or encreasing [*sic*] and softening the Sound; which is done by pressing the Bow upon the Strings with the Fore-finger more or less. In playing all long Notes the Sound should be begun soft, and gradually swelled till the Middle, and from thence gradually softened till the End. And lastly, particular Care must be taken to draw the Bow smooth from one End to the other without any Interruption or stopping in the Middle. For on this principally, and the keeping it

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[1]Geminiani, The Art, 2.

> always parallel with the Bridge, and pressing it only with the Fore-finger upon the Strings with Discretion, depends the fine Tone of the Instrument.[2]

According to Geminiani, bow pressure contributes to the "Beauties of the Violin," of which the basic shape of sound is soft-swelling-soft. The bow Geminiani uses is perfectly suitable for this basic shape of sound, because it has a "give" quality and produces soft-start strokes. To exert pressure Geminiani advocates using "only" the index finger. As discussed in the previous chapter, Geminiani holds the bow at a distance from the frog, and advises that violinists should not be sparing in using the bow. The whole bow should be used, "from the Point to that Part of it under, and even beyond their Fingers."[3] This statement is problematic: when a violinist uses the part of the bow under, or beyond, the fingers, how can the bow be pressed "only with the Fore-finger" as Geminiani instructs? Geminiani's instruction apparently is suitable only when a violinist uses the portion of the bow between its tip and the player's hand.

Geminiani discusses two cases of drawing the bow, which are identified as "quick Notes" and "long Notes." For quick notes, he uses primarily the hand and forearm, and for long

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[2]Geminiani, The Art, 2.

[3]Geminiani, The Art, 2.

notes, the upper arm joins the movement as well. He describes the motion as follows:

> The Motion is to proceed from the Joints of the Wrist and Elbow in playing quick Notes, and very little or not at all from the Joint of the Shoulder; but in playing long Notes, where the Bow is drawn from one End of it to the other, the Joint of the Shoulder is also a little employed.[4]

Geminiani discusses the bow pressure, but not the related factors of bow speed and sounding point in tone production. Mozart provides more information on this topic.

Mozart: Even Tone and Bow Divisions

Mozart uses the human voice as the model of good tone for violinists. According to Mozart, an even tone is indispensable to beauty in singing, and this evenness should be achieved in violin playing also.[5] Mozart writes:

> . . . an even quality of tone must be maintained on the violin in strength and weakness not on one string only, but on all strings, and with such control that one string does not overpower the other.[6]

According to Mozart, to produce a beautiful tone one must know how to apportion the bow into sections of weakness and strength, which he identifies as "divisions." He

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[4]Geminiani, The Art, 2.

[5]Mozart, 100-101.

[6]Mozart, 101.

discusses four divisions of strokes: the first, similar to Geminiani's tone shape, starts softly, increases the tone volume in the middle part of the bow, then dies away at the end of the bow; the second is a "strong-decrease-weak" pattern; the third, a "weak-increase-strong" pattern; and the fourth, a "weak-strong-weak-strong-weak" pattern.[7] By practicing the divisions of the stroke, "one becomes dexterous in the control of the bow, and through control one achieves purity of tone."[8] In addition to these four divisions, Mozart also suggests that violinists should "endeavour to produce a perfectly even tone with a slow stroke."[9] Although Mozart's bow is a pre-Tourte bow, in this instance he seems to be thinking in modern terms of long even tones, for which the Tourte bow is most suitable.

Mozart perceives the function of pressure on the string in tone production, but he does not discuss it in terms of finger, hand, and arm movements. He emphasizes that "evenness must be maintained at all times in the changes between strong (forte) and weak (piano)" and mentions that a good, even tone must be accomplished "by a certain control of the right hand, but in particular by a certain alternate

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[7]For detailed information, see Mozart, 97-99.

[8]Mozart, 99.

[9]Mozart, 99.

adroit stiffening and relaxing of the wrist."[10] In contrast to Geminiani, Mozart emphasizes the wrist rather than the index finger. He does not discuss the wrist action in detail, however, because he believes that it can be better demonstrated than described.[11]

In his discussion of tone production Mozart provides information about the sounding point, not mentioned by Geminiani. He advises that the bow should be placed a little further from the bridge for a soft tone and closer to the bridge for a loud tone.[12] He also recognizes that different strings require different sounding points. For the lower strings, the sounding point is further from the bridge than for A and E strings, because "the thick strings are not so easily moved at their extremities where they are at rest, and if you use force they give forth a rough tone."[13] Concerning the distance from the bridge to the bow, he cautions: "The distance is only slight, and as not all violins are exactly the same you must know how to seek carefully on each for that spot."[14]

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[10]Mozart, 100.

[11]Mozart, 100.

[12]Mozart, 97.

[13]Mozart, 100.

[14]Mozart, 100.

Mozart only briefly touches the topic of bow speed when discussing tone production. He acknowledges the relationship between volume and bow speed: "But be it observed that the stroke in soft tone must be drawn very slowly; when increasing the tone, somewhat quicker; and in the final loud tone very quickly."[15] Although this constitutes more information on this subject than is given by Geminiani, who makes no mention of bow speed, Mozart's discussion does not go into further detail. The significance of bow speed in tone production is more fully examined by pedagogues of later periods.

L'Abbé le fils: Limited Information

Among the pedagogues cited in this chapter, L'Abbé le fils provides the least amount of information on tone production. He gives only one general instruction in his method book: "The bow should be drawn straight and always directed over the sound holes of the violin."[16] He does not discuss bow speed, pressure on the string, or point of contact.

The Nineteenth Century

Baillot and Spohr not only considered the three main factors of tone production; they also explored the

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[15]Mozart, 98-99.

[16]Stowell, Violin Technique, 143.

characteristics of the Tourte bow and incorporate these new factors into their pedagogy. In particular, Baillot discussed the characteristic features of each section of the bow and Spohr offered suggestions on how to use the bow hair.

Baillot: Two Fundamental Strokes

According to Baillot, tone production depends on the manner in which the violinist sets the strings into motion.[17] He emphasizes the importance of the parallel movement of the bow in producing a good tone, writing: ". . . the violinist must always take the greatest care to draw the bow parallel to the bridge in order to obtain a pure tone."[18]

Baillot indicates that there are two bow strokes which are fundamental to tone production, the slow stroke and the fast stroke; and he asserts that they are "the bases of all the others."[19] For the slow stroke, Baillot emphasizes control of bow speed and pressure.[20] Similarly to Mozart, Baillot uses the human voice as his model of tone production, especially with regard to the slow stroke:

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[17]Baillot, The Art, 227.

[18]Baillot, The Art, 227.

[19]Baillot, The Art, 167.

[20]Baillot, The Art, 167.

> It is in this way that he can sing on the violin. He imitates the voice, which neither acts in a jerky fashion nor separates the sounds, but rather sustains them and joins one to the next.[21]

According to Baillot, the fast stroke is characterized by a light contact with the string. However, certain bowings, such as the martelé or staccato which are fast strokes, require more pressure.[22]

Baillot relates bow speed to pitch. That is, he recommends that the bow be drawn more slowly for low pitches and faster for high ones:

> In order to obtain the greatest intensity of sound possible, all other conditions being equal--that is to say the distance from the hair of the bow to the bridge, and the pressure being the same in all cases--the bow must be drawn more slowly for low sounds than for high ones; this is the general principle.[23]

Baillot discerns the different characteristics of three equal sections of the bow, which he identifies as the frog, middle, and tip. Baillot states that the frog possesses the quality of strength: it marks the beat, strikes chords, and produces the accents that require a certain power of tone. According to Baillot, the middle section features balance--a quality of strength tempered by sweetness. It can produce a

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[21]Baillot, The Art, 167.

[22]Baillot, The Art, 168.

[23]Baillot, The Art, 228.

full tone, yet it can be elastic because of its lightness. The bow tip performs two functions: because it is relatively lighter than the other two sections, it is naturally the section for playing softly; however, the tip is not without power and its lack of elasticity also makes it appropriate for accents.[24] Baillot's bow divisions differ from Geminiani's and Mozart's in ways reflecting the capabilities of their various bows. Geminiani's soft-swelling-soft stroke derives from the characteristic of his bow and Mozart's bow divisions indicate his efforts of gaining nuances in tone production.

Baillot considers the music to be the principal determinant regarding the section of the bow to be used:

> Once the intelligent student has determined the three divisions or sections which constitute the general division of the bow, he will practice them and their subdivisions. He will then find without difficulty the proper spot to use in order to give melodies or passages their proper character, depending on their tempo.[25]

According to Baillot, because of the physical characteristics of different sections of the bow, it is natural that a down-bow produces a diminuendo and an up-bow,

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[24]For Baillot's detailed description of bow divisions, see Baillot, The Art, 158-67.

[25]Baillot, The Art, 159.

a crescendo.[26] However, Baillot advises, a violinist must be able to play a sustained tone of steady volume with either an up-bow or down-bow, as well as to produce sounds that he defines as "reversed nuances," such as a crescendo with a down-bow.[27] These effects require sophisticated control of pressure on the string and speed of the bow. Baillot writes:

> . . . a skilled artist must have the strength to have at his disposal either the power of pressure or that of the slow and controlled bow stroke, and, when necessary, to produce a force at the tip of the bow that is not natural there.[28]

Baillot's method of controlling pressure is different from both Geminiani's and Mozart's. While Geminiani uses only the index finger and Mozart emphasizes the wrist, Baillot uses fingers to control the pressure. Discussing sustained forte sounds, he writes: "As the bow approaches the tip, increase the pressure of the fingers on the stick."[29] This technique, it may be observed, is a consequence of the index finger not being separated from the other fingers; thus it cannot exert great pressure on the bow by itself. What Baillot describes as "the pressure of

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[26]Baillot, The Art, 167.

[27]Baillot, The Art, 167.

[28]Baillot, The Art, 167.

[29]Baillot, The Art, 228.

the fingers" is actually the weight of the hand--in direct contrast to Geminiani's rule that pressure be applied "not with the whole Weight of the Hand."

Baillot occasionally mentions the role of the sounding point in tone production, relating his discussion to specific bow strokes. However, he does not discuss it in great detail.

Spohr: Amount of Bow Hair as a Variable Factor

Spohr makes it clear that bow speed, pressure, and placement of sounding point are all related to tone production. He mentions these three factors repeatedly when discussing the first bowing exercise in his book Violin School. He recommends that for a soft tone the bow should be placed further from the bridge, moved more slowly, and pulled with less pressure than for a loud tone.[30] According to Spohr, different strings require different amount of pressure and different sounding points. The G string is less easily set into motion than upper strings, thus requiring more pressure on the bow. On the E string, the bow needs to be placed nearer to the bridge than for the lower strings.[31]

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[30]Spohr, Violin School, 113.

[31]Spohr, Violin School, 114.

To increase pressure, Spohr uses the first finger of the right hand. He writes: "As the bow has but little weight at the point, the first finger of the right hand must be pressed very strongly on the stick."[32] To decrease pressure when the bow approaches the frog, in order that the tone may decrease in volume, the bow "must be gradually lifted up."[33] Like Baillot, Spohr keeps fingers close together in his bow hold. His thumb, however, is opposite the middle finger, in contrast to Baillot's between-index-and-middle-fingers position. Spohr's thumb placement makes it possible for the index finger to exert considerable pressure on the stick. His method of using the index finger to control the pressure is thus closer to Geminiani's approach than to Mozart's or Baillot's.

In addition to the basic three factors influencing tone, Spohr considers another element: the amount of bow hair used. None of the pedagogues previously cited in this chapter discuss this factor. Spohr correlates the amount of hair used with the volume which is achieved for a tone which starts softly, crescendos, and decrescendos. He recommends using only a small portion of the hair at first, gradually increasing the amount of hair on the string as the volume increases, and at the loudest part of the stroke, the full

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[32]Spohr, Violin School, 113.

[33]Spohr, Violin School, 113.

width of the ribbon of hair is on the string.[32] The Tourte bow makes the consideration of amount of bow hair meaningful because it has a wider and perfectly flat ribbon of hair, in contrast to pre-Tourte bows which have either a narrower or imperfect flat ribbon of hair.

The Twentieth Century

The literature reveals that the twentieth-century pedagogues cited in this dissertation generally were aware of the influence of the three main factors--bow speed, bow pressure, and sounding point--in tone production. In their writings, they discussed not only each of the factors but also their interactions.

Auer: No Mention of Bow Speed

Auer devotes an entire chapter of his Violin Playing as I Teach It to a discussion of tone production. However, it is curious that he does not touch on the issue of bow speed in this chapter; only bow pressure and sounding point are discussed.

Auer uses the wrist to control pressure in a manner similar to Mozart's. He considers the wrist to be "the central point round which everything relating to tone production turns,"[33] thus the instrument that should be used

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[32]Spohr, Violin School, 113.

[33]Auer, 52.

to control tone production. He warns not to use the arm to exert the pressure:

> Do not press down the bow with the arm: the whole body of sound should be produced by means of a light pressure of the wrist, which may be increased, little by little, until it calls forth a full tone, perfectly pure and equal in power, from the nut to the point of the bow, and vice versa.[34]

Auer offers examples of three artists, Joachim, Ysaye, and Sarasate, to reinforce his theory, claiming that although these masters each hold the bow quite differently, all three use wrist pressure:

> The single fact that can be positively established is that in producing their tone these great artists made exclusive use of wrist-pressure on the strings. (The arm must never be used for that purpose.)[35]

However, Auer allows that the fingers may join the wrist in exerting the pressure. He suggests that to increase the volume of tone, finger pressure should be used; but, again, not arm-pressure. Auer believes that the question of when wrist pressure or finger pressure should be used is "a problem impossible of solution."[36]

Concerning the sounding point, Auer suggests that the bow may be placed differently for different tones:

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[34]Auer, 56,

[35]Auer, 37.

[36]Auer, 37.

> Only when it is desirable to secure a very soft, sweet tone, *pp*, may you play near the fingerboard and even upon it. On the other hand, as soon as you play near the bridge with any degree of strength the tone grows harsh.[37]

Auer further instructs that no matter where the bow is placed and what kind of stroke is used, the bow should be drawn in a line parallel to the bridge.[38]

Flesch: A Good Tone is the Result of Multiple Factors

Flesch defines a "good" tone in his book The Art of Violin Playing:

> Acoustically a beautiful tone means sounds free from accompanying noises, with as many and as well graded over-tones as possible.[39]

He believes that the production of a good tone is the result of correct administration of bow pressure, length of the stroke, portion of the bow used, number of strings played, pitch, and point of contact.

Flesch provides an extensive and detailed discussion of tone production in The Art of Violin Playing. The point of contact is discussed first. According to Flesch, three factors determine the sounding point:

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[37]Auer, 58.

[38]Auer, 58.

[39]Flesch, The Art, 1:90.

> The point of contact between bow-hair and string is subject to constant change. It is dependent upon the duration of the bow-stroke, the strength of the bow-pressure, and the position to which the left hand is shifted.[40]

Flesch summarizes his rules for determining the point of contact, as follows: for a long stroke, forte, or high left hand positions, the point of contact should be "in the vicinity of the bridge;" and for a short stroke, piano, or low left hand positions, "in the vicinity of the fingerboard."[41] If contrary demands exist, for example, a long stroke on a soft tone or a loud passage played in low left hand positions, the point of contact should be midway between bridge and fingerboard.[42] For double-stops, especially those fingered in a high left hand position on one string and using an open string on the other, he suggests finding "an equalizing point of contact conformable to the exigencies of the widely differing length of the two strings, a golden middle way."[43] For three-note, non-arpeggiated chords, the point of contact should be near the fingerboard, where the strings are "flatter" (closer to the

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[40]Flesch, The Art, 1:81.

[41]Flesch, The Art, 1:82.

[42]Flesch, The Art, 1:82.

[43]Flesch, The Art, 1:83.

same plane), thus making it easier to play all three notes of the chord at once.[44]

Flesch does not use the term "bow speed." Instead, he uses terms such as "bow expenditure" or "length of bow." To produce a big tone, he prefers to use a large bow stroke--an increased expenditure of bow, that is, a faster bow speed:

> The teaching gospel of the large bow stroke is the kernel of the Franco-Belgian as well as the Russian school of violinists and, in general, is surely one of the most valid and recognized of principles.[45]

According to Flesch, when a greater length of bow is used, the string's vibration becomes wider than that produced by using a lesser length of bow.[46] The tone produced by such vibration has a "carrying capacity," the essence of a big tone. He also advises that in general one should not use increased pressure at the expense of diminished bow expenditure to achieve a "*forte*" tone.[47]

According to Flesch, since the bow's weight is unevenly distributed over its length, a violinist should equalize the weight by reducing pressure in the lower part of the bow and

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[44]Flesch, The Art, 1:83-84.

[45]Flesch, The Art, 1:91.

[46]Flesch, The Art, 1:91.

[47]Flesch, The Art, 1:91.

increase pressure in the upper part of the bow.[48] The fingers play an important role in controlling pressure, which he describes as follows:

> In any case the bow pressure is dependent on the manner in which the bow is held; in the main it is carried out by the index finger, and only slightly by the middle finger. The little finger (and in a far lesser degree the ring finger) attends to the raising.[49]

This method of controlling pressure differs from Mozart's and Auer's wrist method and Geminiani's index-finger-only method. Neither is it exactly the same as Baillot's method of using fingers or Spohr's index-finger method, because Flesch's bow hold is different from that of Baillot and Spohr. While Baillot and Spohr place the fingers close together in their bow hold, Flesch separates the fingers.

In addition to using fingers to control bow pressure, Flesch advocates using body movement:

> Diminished pressure which is not produced by raising the bow, but resulting automatically when the player inclines the upper part of the body (and with it the bow) more or less to the right, whereby the bow pressure is suspended to a certain degree, still calls for mention.[50]

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[48]Flesch, The Art, 1:85.

[49]Flesch, The Art, 1:85.

[50]Flesch, The Art, 1:93.

Galamian: Slightly Slanted Stroke

Galamian agrees with other pedagogues that a perfectly straight bow stroke is the foundation of all bowing technique. However, he asserts that a slightly slanted stroke produces the most resonant sound:

> However, it is a fact that in drawing a singing tone at not too great a speed, the most resonant sound will be produced when the bow is at an extremely slight angle with the bridge--in such a fashion that the point of the bow is always a little more toward the fingerboard and the frog slightly closer to the player's body[51]

Galamian does not explain this fact, but only writes that a person whose ear is sensitive to shades of sound resonance and color can confirm it.[52]

Galamian views the three main factors in tone production--bow speed, pressure on the string, and point of contact--as closely related subjects. He considers that any combination of two factors will affect the third one. For example, an increase of pressure with a constant sounding point requires an increase of bow speed, or, an increase of pressure with constant bow speed requires the point of contact to move closer to the bridge.[53] A great variety of

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[51]Galamian, 61.

[52]Galamian, 61.

[53]Galamian, 55.

combinations can result when change occurs in all three factors.

According to Galamian, variation in the three factors will change not only the dynamics but also the tone color. Faster bow speed or greater pressure will produce an increase in sound; slower bow speed or lesser pressure, a decrease in sound. Fast bow speed with little pressure produces a light, loose tone; slow bow speed with much pressure, a dense and focused tone. If the sounding point is near the bridge, the tone is brighter and more incisive; near the fingerboard, the tone is paler and more delicate. A violinist should master all kinds of combinations, thereby becoming capable of producing a wide range of sound character and timbre.[54]

Galamian indicates that the location of the sounding point is determined not only by the other two main factors, bow speed and pressure, but also by factors such as the length, thickness, and tension of the string. The sounding point should be closer to the bridge with slower bow speed, greater pressure, or on thinner strings, and further from the bridge with faster bow speed, less pressure, or on thicker strings. When the left hand is in higher positions,

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[54]Galamian, 62-63.

the sounding point should also be closer to the bridge than when the left hand is in lower positions.[55]

On the issue of controlling pressure, Galamian differs from all of the previously cited pedagogues, by employing a variety of sources to achieve control:

> The pressure that the bow applies to the strings can derive either from the weight of the bow, the weight of the arm and hand, from controlled muscular action, or from a combination of these factors.[56]

Galamian is the first among the pedagogues cited in this chapter to write about using the weight of the arm to control pressure, a manner prohibited by Geminiani and Auer and not mentioned by any of the others except Rolland, who will be discussed in the next section of this chapter. Galamian indicates that the "quality," not just the amount of the pressure, is important in tone production, and he considers the quality to be determined by the manner in which pressure is transmitted.[57] According to Galamian, pressure resulting from a dead weight will crush the vibration of the string and produce a "bad" tone.[58] Galamian likens the hand and arm to a system of springs in

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[55]Galamian, 58-61.

[56]Galamian, 57.

[57]Galamian, 57.

[58]Galamian, 57.

which the fingers, thumb, wrist, and arm act as mechanical springs:

> These springs can transform weight or pressure into an impulse that makes the string respond in a manner that is thoroughly alive and susceptible to the finest modulations.[59]

According to Galamian, any rigidity will make the tone hard and ugly. Resiliency and springiness in the functioning of the whole arm from shoulder to finger tips are necessary to producing a good tone.[60]

Rolland: Using Arm Weight

Rolland views the point of contact, bow speed, and bow pressure as closely related factors in tone production as does Galamian. He does not discuss how these factors affect the tone, but indicates that any change in one factor will require changes in the other factors:

> In good tone production, these three contributing factors are properly matched and produce even string vibrations; if any one component is changed, care must be taken to adjust one or possibly both of the other factors.[61]

According to Rolland, because the string offers the bow the greatest resistance near the bridge and the least near

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[59]Galamian, 57.

[60]Galamian, 57-58.

[61]Rolland, 164.

the fingerboard, greater friction (bow pressure) or slower bow speed are needed near the bridge and less bow pressure or faster bow movements are required near the fingerboard.[62] The weight of the bow is one of the sources of the pressure needed. Rolland measures the weight of the bow on the string and finds it to be about two ounces when the bow is near its balancing point and less than one ounce when it is at the tip. In order to produce the same volume of sound, the player must apply about two pounds of weight at the tip to compensate for the loss of bow weight of about one ounce.[63]

In reference to applying pressure on the bow, Rolland's opinion differs from the other pedagogues. He criticizes the conventional instruction of using the index finger to apply pressure on the bow and offers his own suggestion:

> The typical suggestion to press the first finger down for a bigger sound is ill-advised, as it tends to localize the pressure in the hand and short-circuit the forces of tone production. A much better way to produce needed bow pressure is to release part of the natural weight of the arm into the string through the bow while letting the thumb and fingers merely resist the collapse of the bow hold.[64]

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[62]Rolland, 35.

[63]Rolland, 35.

[64]Rolland, 35.

Both Rolland and Galamian use arm weight to produce the needed bow pressure. They differ in that Rolland uses the weight of the arm as the main pressure source and Galamian uses it as one of several sources. According to Rolland, the weight of the arm is released by using the rotary movement of the upper arm:

> The increase and decrease in bow pressure is achieved by the rotary movements of the upper arm. The counterclockwise rotation tends to increase the bow pressure, and the clockwise rotation tends to decrease it, provided the correct bow hold is maintained and the weight of the relaxed arm is utilized.[65]

Rolland claims that the problem of bowing is not isolated to the right arm. Bowing technique should not be limited to the separated movements of the fingers, hand, and arm; it is based on a total body action.[66] According to Rolland, when playing a violin the large parts of the body lead and the small parts follow:

> Thus, in bow changes or string crossings, the change first occurs in the slight transfer of body weight (with the exception of fast or short strokes). Then the chain of motion passes through the upper arm, forearm, hand, fingers, and bow.[67]

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[65]Rolland, 164.

[66]Rolland, 32.

[67]Rolland, 39.

Rolland believes that finger pressure is not the principal source of tone production. It is used mainly, in his view, for nuances, accents, and general refinements of tone.[68]

Summary

Although the pre-Tourte bow and the modern bow have different characteristics, the basic principles of tone production are applicable for both bows. Table 2 reveals the principles of different schools, which present similar opinions about the main factors in tone production.

The pedagogues cited in this chapter agree that in tone production the bow should be drawn along a line parallel to the bridge. Some, such as Baillot, view the straight movement of the bow as the most important issue in producing a good tone. Galamian agrees that a straight bow stroke is the foundation of tone production, but also offers an opinion that a slightly slanted bow stroke produces the most resonant sound.

The pedagogues all generally agree that the three main factors--bow speed, bow pressure, and point of contact--play important roles in tone production, though they may emphasize and interpret the functions of these factors differently.

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[68]Rolland, 35.

Bow speed is generally recognized as related to dynamics. To produce a loud tone the bow speed would be faster and to produce a soft tone it would be slower. Some pedagogues, like Baillot, relate bow speed to pitch. Thus the bow moves faster for low sounds and slower for high ones. Others, such as Rolland, relate bow speed to the sounding point--the closer the sounding point to the bridge, the slower the bow speed required.

Bow pressure is also considered to be related to dynamics. The pedagogues agree that greater pressure is required for a bigger tone. Pressure is also related to the thickness of the strings, as indicated by Spohr. Changes in bow pressure will also change the tone color, as discussed by Galamian.

The point of contact is a complicated area among pedagogues. It is generally considered to be related to dynamics, pitch, left hand position, thickness of string, tone color, bow speed, and bow pressure. According to the pedagogues, the point of contact should be closer to the bridge for loud tone, high pitch, high left hand position, thin string, bright and incisive tone, slow bow speed, or great bow pressure. For soft tone, low pitch, low left hand position, thick string, sweet and delicate tone, fast bow speed, or light bow pressure, the sounding point should be further away from the bridge. For a combination of

different conditions, a violinist should seek a middle way accommodating those conditions.

According to the pedagogues, the three main factors in producing tone are not isolated, as they directly interact. When a change occurs in one factor, the other two factors may need to be adjusted also. In addition to these three factors, there are other considerations in tone production, such as the amount of bow hair to be used, as discussed by Spohr, and the sections of the bow to be used, as discussed by Mozart and Baillot.

Pedagogues differ widely regarding the issue of bow pressure control. Theories can be divided into three groups according to specific methods.

The first group uses fingers to control the pressure. Geminiani, Baillot, Spohr, and Flesch all belong to this group; however, they each suggest different ways to use the fingers. Geminiani uses exclusively the index finger to press on the bow. Baillot uses the fingers to transfer the weight of the hand onto the bow. Much like Geminiani, Spohr uses the index finger to control bow pressure. According to Flesch, the index finger is the major force used to control bow pressure but not in isolation, as the middle finger also helps when needed. He also uses body movement to reduce bow pressure.

The wrist plays the major role in the method advocated by the second group, which includes Mozart and Auer. According to Auer, the wrist controls the tone because the wrist is at "the central point" in tone production. In addition, the fingers may join the wrist to control the pressure when needed.

Some pedagogues, such as Geminiani and Auer, prohibit using the arm to control bow pressure. However, the arm has been found to be a very important source in tone production by pedagogues of the second half of the twentieth century, such as Galamian and Rolland, who form the third group. Rolland developed his own total-body-action theory. According to this theory, in violin playing the larger parts of the body lead and the smaller parts follow. Therefore, the arm actually plays a leading role in tone production.

Tone production is a complex area in violin playing, and requires substantial study and practice to develop skill at controlling the strength of fingers, hand, and arm, and at manipulating the balance between bow speed, bow pressure, and sounding point.

TABLE 2: TONE PRODUCTION

	Pre-Tourte Bow			Tourte Bow					
	The 18th Century			The 19th Century		The 20th Century			
	Geminiani	Mozart	L'Abbé le fils	Baillot	Spohr	Auer	Flesch	Galamian	Rolland
Bow Parallel to Bridge	Yes.		Yes.	Yes.		Yes.		Yes, but slightly slanted.	
Bow Speed		Slower: softer tone. Quick: increasing tone.		Slow: singing tone; lower pitch. Fast: higher pitch.	Slow: soft tone. Fast: loud tone.		Larger bow expenditure: carrying capacity.	Faster: increase sound. Slower: decrease sound. Also related with other factors.	Related to bow pressure and sounding point.
Bow Pressure	Pressing bow only with 1st finger; soft-swell-soft.	Bow divisions; even tone; control pressure with wrist.		Characteristics of parts of bow; use fingers to control bow pressure.	Less pressure: soft tone; high strings. More pressure: loud tone; low strings. Control pressure with 1st finger.	Control pressure with wrist.	1st and 2nd fingers: exert pressure. 4th and 3rd fingers: raise bow.	Controlled by multiple sources.	Using arm weight. Related to bow speed and sounding point.
Sounding Point		Further away from bridge: soft; low strings. Closer to bridge: loud; high strings.			Further away from bridge: soft tone; Closer to bridge: high strings; loud tone.	Near fingerboard: soft, sweet tone; pp. Near bridge with strength: harsh tone.	Depending on: duration of stroke, bow pressure, left hand position.	Near fingerboard: paler, delicate; slower bow speed; greater bow pressure; thinner string. Near bridge: brighter, incisive; faster bow speed; less bow pressure; thicker strings.	Near fingerboard: less bow pressure; faster bow speed. Near bridge: greater bow pressure; slower bow speed. Related to bow speed and bow pressure.

CHAPTER VI

DÉTACHÉ

The détaché stroke takes its name from a French word meaning "detached." The New Grove Dictionary of Music and Musicians defines the term as "the basic stroke in which one note is bowed by one bowstroke."[1] The A.S.T.A. Dictionary of Bowing Terms for String Instruments gives the following definition:

> [Détaché] Comprises a family of bow-strokes, played on-the-string, which share in common a change of bowing direction with the articulation of each note. Détaché strokes may be sharply accentuated or unaccentuated, legato (only in the sense that no rest occurs between strokes), or very slightly staccato, with small rests separating strokes.[2]

In the development of violin playing, the meaning of the term "détaché" has changed, as has the détaché bowing technique. Before Tourte standardized the bow, détaché corresponded to the meaning of the word--detached, that is, with separations between notes. Boyden indicates that the

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[1]The New Grove Dictionary of Music and Musicians, ed. by Stanley Satie (London: Macmillan Publishers Limited, 1980), 20 Vols., s.v. "Bow," by David Boyden, 3:134.

[2]Barbara Garvey Seagrave and Joel Berman, The A.S.T.A. Dictionary of Bowing Terms for String Instruments (Urbana, IL: American String Teachers Association, 1968), 15.

term "détaché" was synonymous with the term "staccato" during the eighteenth century.[3] Because of the "yielding" or "give" quality of the pre-Tourte bow, there is a break in the sound when a change of bow direction occurred. With a Tourte bow, violinists are able to make bow changes without a break, since the Tourte bow can produce the tone immediately at the beginning of each stroke. Although certain détaché strokes are still separated, the basic détaché gradually has become a "connected" instead of "detached" bowing.

The Eighteenth Century

Neither Geminiani nor Mozart used the term "détaché." During their time, the term was used mainly by the French and its meaning was different than that of today. The basic "détaché" strokes of Geminiani, Mozart, and L'Abbé le fils were separated strokes, which reflected the characteristics of the bow they used and their musical taste; and this eighteenth-century détaché continued to some extent into the nineteenth century. Nonetheless, there were efforts among the eighteenth-century pedagogues to make connected strokes, which presaged the modern concept of the détaché stroke.

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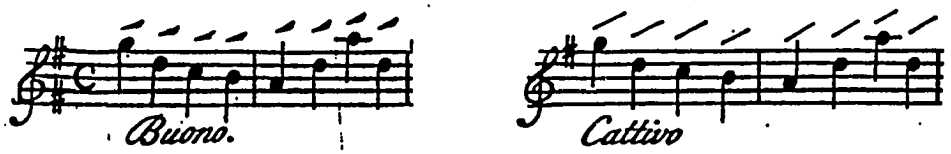
[3]Boyden, History, 526.

Geminiani: Separated Swelling Stroke

Geminiani does not use the term "détaché" in his treatise, but he offers some examples in which certain bowings are obviously a kind of détaché, that is, one note is played by one bow stroke. In Example 20 of his treatise, there are two "détaché"-type bowings. The first one bears a sign " 𝆒 " which indicates "the Swelling of the Sound;" and the second one is marked with a " / " indicating that "the Notes are to be play'd plain and the Bow is not to be taken off the Strings."[4] (ex. 1)

Ex. 1: Geminiani, The Art, 27.



Geminiani classifies the bow stroke producing swelling sound as "Buono" (good) and the plain bow stroke as "Cattivo" (bad), but he does not comment further on how either stroke is to be produced. However, it can be inferred that the "Buono" stroke involves a slight lift or release between notes since, by contrast, he instructs that in executing the plain bow stroke the bow "is not to be taken off the Strings." He does not explain why these strokes are good or bad, but Boyden points out that "bow

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[4]Geminiani, The Art, 8.

strokes of individual notes without nuance are generally considered mediocre [by Geminiani]."[5] The "Buono" stroke produces a sound described by Geminiani as "one of the Beauties of the Violin."[6] Geminiani indicates that the plain bow stroke is good only for sixteenth notes at a tempo of Allegro or Presto, as he marks in the music.[7] It would in fact be easier at a slower tempo to produce the swelling sound than the plain sound with a bow, like Geminiani's, which "yields" at the beginning of each stroke.

Mozart: Short Stroke and Easy Stroke

Like Geminiani, Mozart does not use the term "détaché." He devotes a whole chapter of his treatise to discussing rules of down and up bow strokes and another chapter to discussing the varieties of bowings, but offers very little comment on particular bow strokes. Nonetheless, from the small amount of information that he does offer concerning a separated stroke, the execution of Mozart's "détaché," that is, one note per stroke, can be understood.

In the sixth chapter of his treatise, Mozart gives the following example:

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[5]Geminiani, The Art, viii.

[6]See Chapter V.

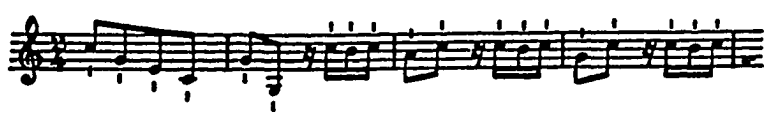
[7]Geminiani, The Art, 27.

Ex. 2: Mozart, 110.

He writes about this example: ". . . every note must be detached strongly and shortly with a separate stroke."[8] The absence, in this example, of any dots or marks to indicate the "strong and short" articulation of each note is noteworthy. It highlights historical differences in the execution of this stroke. A modern violinist, seeing this notation, would use a smoothly-connected détaché, which would be a misreading of Mozart's intention.

The separated stroke can be accented. In that case, a short stroke will appear over or under each of the notes:

Ex. 3: Mozart, 47.



The interpretation of the détaché stroke is complicated, however, by being dependent on the tempo of the passage. About fast passages, Mozart writes:

> Consecutive and continuous rapid notes are subject to many variations. I will here set down a single passage which from the first can be played quite

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[8]Mozart, 100.

> smoothly and easily, and in which each note may be performed with its own separate stroke. Great pains must be taken with their exact equality, and the first note of each crotchet must be marked with a vigour which inspires the whole performance.[9]

He gives the following example, where once again there are no special marks (only the strokes for accents), but here the bow stroke is a "smooth and easy" one and not a "strong and short" one:

Ex. 4: Mozart, 114.

For Mozart, then, a separated stroke may be accented or unaccented; depending on the character and speed of the passage, it may be more articulate or more smooth. The "exact equality" of the strokes has here surfaced for the first time as an important issue.

L'Abbé le fils: Using the Term "Détaché"

L'Abbé le fils uses the term "détaché" to indicate the bowing style for notes bearing stroke marks. In the following example, the short vertical strokes under the notes are similar to those in Mozart's example (Ex. 3). L'Abbé le fils' instruction is that the notes with short

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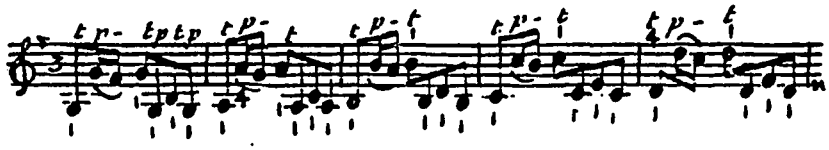
[9]Mozart, 114.

strokes are played with détaché strokes,[10] but he does not offer instruction on how to execute the strokes. In the following example, the letters "t" (tirez) and "p" (poussez) indicate down and up bows:

Ex. 5: L'Abbé le fils, 3.



The tradition of the eighteenth-century separated détaché continues into the nineteenth century, especially in the French school, even as the legato détaché acquires greater usage elsewhere.

The Nineteenth Century

Although the Tourte bow provided possibilities of making a bow change without a break, Baillot inherited the tradition of the eighteenth century, and his détaché strokes were basically separated. Meanwhile, Spohr capitalized on the characteristics of the Tourte bow, and his détaché strokes became connected.

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[10]L'Abbé le fils, Principes du violin (Paris: 1761; reprint Paris: Centre de Documentation Universitaire, 1961), 3.

Baillot: "French Détaché"

Baillot's The Art of the Violin reveals that the use of the term "détaché" was still very general in the first half of the nineteenth century, compared to its more specific use in the twentieth century. He includes such bow strokes as martelé, perlé, ricochet, spiccato, and staccato with grand détaché and sustained détaché in the category of "the détaché bow strokes." Of these, only the "grand détaché" and "sustained détaché" are relevant to the discussion in this chapter.

Baillot discusses four varieties of détaché, the grand détaché and three species of the sustained détaché. All but one are separated strokes, which are called "French détaché" by later violinists including Flesch.

Baillot states that the grand détaché should be played in the middle portion of the bow,[11] and gives the following instruction on how to play it:

> Place the bow at a distance from the bridge. Attack the string, down-bow, quickly and with a little pressure. Let only a single stroke be heard. Stop the bow very short, and leave it on the string without pressure. Do the same up-bow. Note: The amount of bow will depend on the tempo.[12]

He gives an example:

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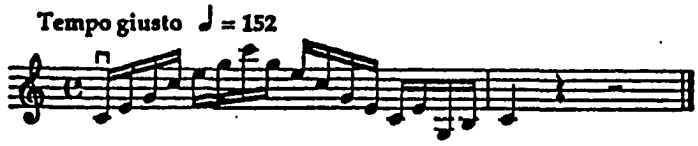
[11]Baillot, The Art, 173.

[12]Baillot, The Art, 173.

Ex. 6: Baillot, The Art, 173.[13]



This example is to be played in the following manner:

Ex. 7: Baillot, The Art, 174.

Since by Baillot's time the Tourte bow was in use, a separation between strokes was no longer automatic, but must be deliberately induced. This makes for an interesting comparison with the earlier pedagogues. Geminiani and Mozart, using pre-Tourte bows, suggest that fast passages be played with "plain bow strokes" or "smoothly;" while Baillot, using a modern bow, endeavors to retain the eighteenth-century tradition of separating the notes, even at a fairly brisk tempo.

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[13]The tempo mark in Ex. 6 indicates that a quarter note equals 152 M.M. This appears to be a misprint. Baillot writes in his instructions: "This grand détaché can be articulated up to two sixteenth notes = 152 M.M., and even to two sixteenth notes = 160 M.M. if the passage is short." (Baillot, The Art, 173.)

Baillot names three types of the sustained détaché stroke. The first one is simply termed the "sustained détaché." He states:

> The sustained détaché is played in the middle or at the tip of the bow. The player should keep the bow pretty much on the string. It is played in such a way that there is no separation between the notes.[14]

Among the four types of Baillot's détaché strokes, this stroke is the only one similar to the modern détaché which involves no separation between the notes. However, Baillot limits its use to the tremolo passages in orchestral music.[15]

Baillot names the second kind of the sustained détaché stroke "melodic sustained détaché." To play this stroke, he writes:

> . . . the player must bring the bow a little closer to the bridge. Play very softly, sustaining the note with as little bow as possible. Separate each note by a little silence.[16]

This stroke, like the grand détaché, involves separation in the execution.

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[14]Baillot, The Art, 188.

[15]Baillot, The Art, 188.

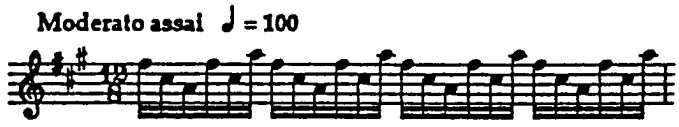
[16]Baillot, The Art, 188.

For the third type of sustained détaché stroke, the "détaché with pressure," the notes are also separated from one another. Baillot advises:

> The détaché with pressure is sometimes played at the tip of the bow. This is done in passages whose character requires a sound a little flatter than that given by the martelé; this makes it necessary to hold the bow continually on the string.
>
> This détaché corresponds to the way in which Rode usually played passages; it should be used only rarely in compositions other than his.[17]

Baillot uses one of Rode's caprices, Op. 22, No. 8, as an example (ex. 8). He makes it clear that all the notes are to be separated.[18]

Ex. 8: Baillot, The Art, 189.



For Baillot, then, the détaché stroke is primarily a separated stroke. He gives only a single example of a legato détaché, and limits its use in orchestral music.

Spohr: Connected Détaché

While Baillot's détaché retains the eighteenth-century preference for separated strokes, the writings of Spohr, his

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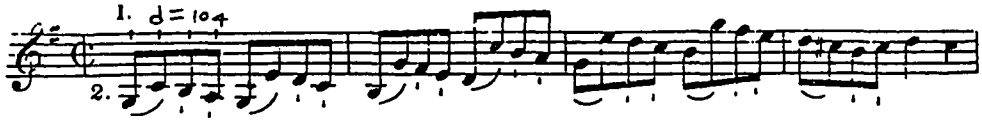
[17]Baillot, The Art, 189.

[18]Baillot, The Art, 189.

German contemporary, reflect a new interest in the connected bow stroke. In his Violin School, Spohr discusses a variety of bowings, illustrating them with examples. The following is one of them:

Ex. 9: Spohr, Violin School, 118.



He remarks:

> At No. 1, each note receives a separate bowing. This bowing (called by the French, détaché) is made with a steady back-arm and as long strokes as possible, at the upper part of the bow. The notes must be perfectly equal both in power and duration, and succeed each other in such a manner, that, in changing from the down to the up-bow or the reverse no break or chasm may be observed. At the crochet rest in the fourth bar the bow is raised from the string and the following bar commenced with a down bow. This method of bowing is always understood, when no bowings are indicated.[19]

Although there are strokes, or wedges, over the first four notes, which may imply that the rest notes of this example should bear the same marks, Spohr instructs violinists to play these notes without breaks. Because the upper arm (back-arm) is steady, the bow stroke is executed

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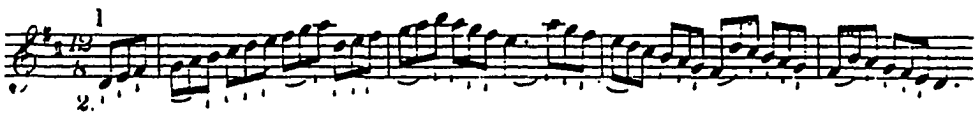
[19]Spohr, Violin School, 118. Spohr uses two sets of bowing for each example. In the example above, the numbers 1 and 2 indicate two different bowings.

with the forearm and hand in the upper part of the bow. Much like Mozart, Spohr emphasizes the equality of power from stroke to stroke.

In a later example (Ex. 10), Spohr gives no marks for bowing No. 1, which is the détaché:

Ex. 10: Spohr, Violin School, 122.



Again, Spohr emphasizes the equality of volume and accentuation on each note:

> At the détaché of No. 1, again observe, that the notes must be all of equal power; also, that it is a bad, though by no means uncommon style of playing, to mark the first of every three notes.[20]

Spohr's concept of connected détaché stroke, as well as his description of the physical approach to the stroke, is carried into the twentieth century.

The Twentieth Century

The twentieth-century pedagogues view the détaché stroke as the most common bow stroke and the foundation of bowing technique. Essentially, the twentieth-century détaché is a connected stroke, but there are also special

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[20]Spohr, Violin School, 122.

kinds of détaché which are separated, such as Galamian's détaché lancé.

Auer: A Technical Foundation

Auer claims that the détaché is the "foundation of all bowing technique,"[21] but he gives only brief instructions on how to execute the stroke in his book Violin Playing as I Teach It. He states:

> In playing the detached stroke use the whole length of the bow, playing in a moderate tempo, and endeavor to secure a tone of equalized strength in the up- and down-strokes. Always attack each stroke from the wrist, continuing as the forearm enters into play, until you reach either the point, at the down-stroke, or the nut, at the up-stroke. Vary this stroke by using different sections of the bow separately playing with the upper bow, in the middle, and at the nut.[22]

The earlier pedagogues who have been cited here either do not specify the part of the bow to be used for the détaché, or else designate the middle or upper parts of the bow for the stroke. Auer is the first among the cited pedagogues to suggest the lower part of the bow and the whole bow for détaché. He considers the détaché appropriate at a "moderate tempo," and emphasizes the equality of tone of each stroke, as do Mozart and Spohr. Auer does not specify whether he separates or connects the notes, nor does he

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[21]Auer, 69.

[22]Auer, 69.

provide any musical example which might clarify this matter. But, Auer gives the détaché an entirely new significance by asserting that the détaché is the technical foundation of bowing.

Flesch: Preference for the German Détaché

Flesch, in The Art of Violin Playing, compared the French détaché, represented here by Baillot, to the German détaché, represented here by Spohr. He asserts that the French détaché has an advantage over the German because it has "greater impulsion" and "carrying power of tone," yet it has the disadvantage of inferior possibilities of expression.[23] He describes the French détaché as "antiquated and unfitting for the interpretation of modern works, even in France," and states that the German détaché is "generally accepted."[24]

Much like Auer, Flesch identifies the détaché as "the most important fundamental stroke."[25] He differentiates the détaché from sustained strokes (son filé) by the length of the stroke, stating that a stroke lasting less than one second is a détaché and lasting longer than one second a

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[23]Flesch, The Art, 1:67.

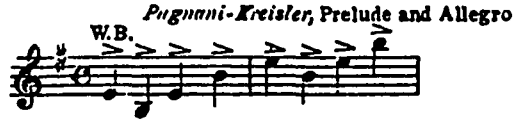
[24]Flesch, The Art, 1:67.

[25]Flesch, The Art, 1:66.

sustained stroke (son filé).[26] Flesch's détaché is a connected stroke; nonetheless, according to Flesch, the stroke is characterized by separation, in contrast to legato. The separation is caused not by means of stopping the bow, but is "unavoidably consequent upon the change of bow."[27] This separation mentioned by Flesch is totally different from that of Baillot, which is caused by stopping the bow. Flesch discusses three types of détaché: the détaché with the whole bow; the great, broad détaché; and the short, small détaché.

Flesch gives several music examples for the "détaché with the whole bow," including the following:

Ex. 11: Flesch, The Art, 1:66.



Of the execution of this stroke, he writes:

> The mechanical process, by means of which the expressive form of the "impulsion" is carried over to the bow, is a certain accentuation of the beginning of the stroke, caused by an extended bow-expenditure.[28]

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[26]Flesch, The Art, 1:64.

[27]Flesch, The Art, 1:66.

[28]Flesch, The Art, 1:66.

For Flesch as for Auer, the whole-bow détaché is an accented stroke. Their technical approaches differ, however: Flesch's accent is produced by bow speed, while Auer's is a pressure accent imposed by the wrist.

Flesch's "broad détaché" is to be played with at least half of the bow and is used at slow tempos. According to Flesch, a player should be able to play this détaché in any part of the bow; yet, from a purely technical standpoint the upper half of the bow is favored, especially on the higher strings, because, as Flesch explains, "the pressure we exert in that case demands less exertion than the requisite raising of the bow at the lower half."[29]

Flesch believes that the "small détaché" represents the most important and most widely used of all types of bowing, and that complete control of it is a prerequisite to good bow technique.[30] Thus, to some extent he shares Auer's view that a détaché is a means to a technical end, and not solely a musical end in itself. According to Flesch, the small détaché can be best played above the middle of the bow. The following figure shows the specific part of the bow referred to:

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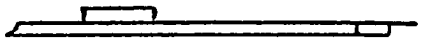
[29]Flesch, The Art, 1:66.

[30]Flesch, The Art, 1:67.

Fig. 5: Flesch, The Art, 1:67.



However, Flesch asserts that a violinist should be able to produce the détaché in a tonally beautiful manner in any part of the bow.[31] According to Flesch, the arm plays the main role in executing this small détaché. At the nut, the upper arm leads the arm movement, and in the middle and at the point of the bow the forearm leads. The wrist should always be flexible and the fingers should join the movement at the change of bow direction.[32] Flesch's method differs from that of Spohr, who limits the use of the détaché to the upper part of the bow and uses only the forearm and hand in executing the stroke. His method is different also from that of Auer, who starts the motion from the wrist; in Flesch's method, the wrist is a follower.

Galamian: Connected and Separated Strokes

Galamian discusses four kinds of détaché. The "simple détaché" and the "accented, or articulated, détaché" are connected détaché strokes; "détaché porté" and "détaché lancé" are separated strokes.

Galamian describes the "simple détaché:"

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[31]Flesch, The Art, 1:67.

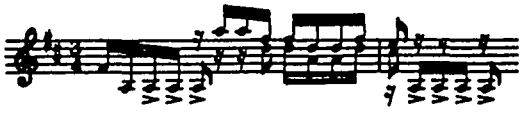
[32]For Flesch's description of the arm and finger movements, see Flesch, The Art, 1:67.

> A separate bow is taken for each note and the stroke is smooth and even throughout with no variation of pressure. There is no break between the notes, and each bow stroke has, therefore, to be continued until the next takes over. The simple détaché can be played in any part of the bow and with any length of stroke from the whole bow to the smallest fraction.[33]

According to Galamian, the execution of the simple détaché depends on the length of the stroke, the bow speed, and the dynamic. Galamian gives a general rule stating that the faster the stroke, the less the arm will participate in the action.[34]

Galamian's "accented or articulated détaché" is similar to Auer's and Flesch's détaché with the whole bow. As with the stroke which Auer and Flesch describe, Galamian's accented détaché has a clear articulation at the beginning of each stroke; but from the example Galamian gives for this stroke (Ex. 12), it can be inferred that his stroke is short, or at least uses less than the whole bow.

Ex. 12: Galamian, 68.



Example 48
Bach: *Partita No. 2 in D minor*
Chaconne (measure 169)

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[33]Galamian, 67.

[34]Galamian, 67.

While Auer uses pressure and Flesch uses bow speed to produce the articulation, Galamian advocates a combination of pressure and bow speed. According to Galamian, the accent or articulation is caused by "a sudden increase in both pressure and speed."[35] Galamian also states that the stroke "will almost always be continuous with no air-space between the notes, but exceptions do occur."[36]

Galamian's "détaché porté" is an expressive stroke which involves a slight swelling at the beginning followed by a gradual lightening of the sound. This stroke recalls Geminiani's swelling stroke and is, in this writer's opinion, a twentieth-century attempt to imitate the eighteenth-century stroke. Galamian gives the following example, from a Baroque work, in which the notes with short dashes are played with a détaché porté stroke.

Ex. 13: Galamian, 69.

Example 53: Détaché lancé
in combination with détaché porté
Bach: *Sonata No. 1 in G minor*
Second movement: Fugue (measure 47)

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[35]Galamian, 67.

[36]Galamian, 67-68.

Galamian brings about the swelling by applying a carefully graded additional pressure and speed at the beginning of each note, without actually accenting it. The inflection of this stroke gives an impression of separation even though there may in fact be no silence between notes.

The "détaché lancé" is a real "separated" détaché. Galamian executes this short stroke by great initial bow speed which slows down at the end of the stroke.[37] The difference between the porté and lancé is that there is neither accent nor swell at the beginning of the tone for the lancé. According to Galamian, there is generally a clear break between the notes, except when the stroke is applied to fast notes.[38]

Rolland: Rotary Motion of the Arm

Rolland maintains the twentieth-century consensus that the détaché is the most common bow stroke. For him the détaché is always a connected stroke; he states that "the bow never stops between strokes."[39] According to Rolland, the détaché stroke may be slow or very fast. However, the stroke cannot be very slow, because he agrees with Flesch that a stroke lasting less than one second is a détaché and

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[37]Galamian, 68-69.

[38]Galamian, 69.

[39]Rolland, 168.

lasting longer than one second a sustained stroke (son filé).[40]

Rolland is the only pedagogue under discussion here to examine the rotary motion of the upper arm in the execution of a détaché stroke. According to Rolland, a balanced arm is essential to the production of the stroke. He writes:

> Critical for the mastery of détaché is a lightly and sensitively balanced arm in which a slight involuntary rotation of the upper arm occurs with the other movements of the arm, wrist, and fingers.[41]

The upper arm rotates counterclockwise on a down bow and clockwise on an up bow. According to Rolland, the rotary movement of the upper arm moves the elbow slightly up and to the right during a down bow, and down and to the left during an up bow.[42] He claims that rotary movements do not require fixation of a limb, and therefore are efficient and minimize fatigue.[43] He describes an optimally produced détaché:

> In good détaché bowing, the arm moves with the lightness of a pendulum and maintains the sensitive balance of a suspended mobile. Both the upper arm and forearm move all the time; however, the proportion of the two movements changes according to the part and length of bow used. In the lower part of the bow, there is only a little forearm action; at the middle

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[40]Rolland, 168.

[41]Rolland, 168.

[42]Rolland, 169.

[43]Rolland, 168.

> and upper parts of the bow there is much more forearm action and only a very slight upper arm action. However, some movement takes place in both the forearm and upper arm at all times.[44]

Rolland further discusses three types of détaché: the "simple détaché," "accented détaché," and "expressive (singing) détaché." His description of the détaché stroke in general is suitable for all of these types. There is an articulation for each "accented détaché" stroke. The wrist leads in the execution of this stroke, and fingers are allowed to bend or stretch a little in the process.[45] Rolland's "expressive (singing) détaché" is similar to Galamian's détaché porté. They use the same mark, a short dash, to indicate the strokes they describe. Two features, however, differentiate the execution of their bow strokes. Rolland only articulates the beginning of each stroke, while Galamian includes a slight swelling. Rolland "bends the bow stick"[46] (thus applying pressure) to produce the articulation, while Galamian uses both bow speed and pressure to generate the swell.

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[44]Rolland, 170.

[45]Rolland, 170.

[46]Rolland, 171.

Summary

The détaché was a "separated" bow stroke in the eighteenth century. This eighteenth-century tradition continued into the nineteenth century, as reflected in Baillot's method. It was during the nineteenth century that the détaché gradually became a "connected" bow stroke. Although in the present day, certain détaché strokes are "separated" ones, such as Galamian's détaché lancé, essentially the détaché is a "connected" bow stroke.

The détaché stroke becomes a crucial one in twentieth-century bowing technique; Auer, Flesch, Galamian, and Rolland describe the détaché as "fundamental" or as a "most common" stroke. Table 3 displays the terms used by pedagogues, characteristics and execution of their détaché strokes. The number appearing in the table indicate different bow strokes used by pedagogues.

There may or may not be special marks used to indicate the détaché stroke. When special marks are needed, various pedagogues use different signs. In the eighteenth century, Geminiani used a swelling sign or a slant for the "détaché" stroke; Mozart and L'Abbé le fils used vertical strokes or no sign at all. In the nineteenth century, it was common to use no marks for the détaché; but dots and wedges were evidently available markings, as they appear in Baillot's and Spohr's works, respectively. It has also been common in

the twentieth century to use no signs for the détaché stroke. However, particular signs have been used to specify certain varieties of the détaché. Accent marks (>) were used by Flesch for the détaché with the whole bow, and by Galamian and Rolland for the accented détaché. Galamian used short dashes for the détaché porté; Rolland used the same mark for his corresponding stroke, the expressive détaché. Galamian used short dashes with dots under them to indicate the détaché lancé.

Détaché can be played in a "plain" manner or with nuances, as reflected in Geminiani's writing. The nuance may be a swell, such as in Geminiani's "Buono" bowing and Galamian's détaché porté; an accent, used by Mozart, Auer, Flesch, Galamian, and Rolland; or just an articulation, such as in Rolland's expressive détaché.

In the eighteenth century, the détaché was a short stroke. The pedagogues of that time did not specify what part of the bow should be used. The early nineteenth-century pedagogues used the middle and upper parts of the bow for détaché strokes. In the twentieth century, pedagogues have advocated playing the détaché stroke in any part and with any length of the bow. However, the middle and upper parts of the bow are the easiest locales for producing this stroke. The twentieth-century détaché stroke

is always played on the string, whether or not there are any audible breaks between notes.

The eighteenth-century pedagogues did not explain the mechanical process used in executing the détaché. The nineteenth-century master teachers did so only cursorily. Nevertheless, one may assume that when they executed the détaché, they applied their own particular principles of tone production. The twentieth-century pedagogues provided more detailed explanation. In Auer's method, the wrist was the leader in executing the détaché, while Flesch used the arm to lead and the wrist was a follower. Rolland explained the rotary motion of the upper arm, and according to him, a balanced arm is essential to master the détaché.

TABLE 3: DÉTACHÉ

	Pre-Tourte Bow			Tourte Bow					
	The 18th Century			The 19th Century		The 20th Century			
	Geminiani	Mozart	L'Abbé le fils	Baillot	Spohr	Auer	Flesch	Galamian	Rolland
Term	No particular term.	No particular term.	Détaché.	1) Grand détaché. 2) Sustained détaché. 3) Melodic sustained détaché. 4) Détaché with pressure.	Détaché.	Détaché.	1) Détaché with whole bow. 2) Broad détaché. 3) Small détaché.	1) Simple détaché. 2) Accented détaché. 3) Détaché porté. 4) Détaché lancé.	1) Simple détaché. 2) Accented détaché. 3) Expressive détaché.
Marking	1) 2) /	1) No particular marking. 2)	1) 2) No particular marking.	No particular marking.	1) 2) No particular marking.		1) > 2) No particular marking.	1) No marking. 2) > 3) 4)	1) No marking. 2) > 3)
Characteristic	1) Swell. 2) Plain.	1) Separated. 2) Separated and accented.	1) Separated. 2) Connected?	1, 3, & 4) Separated. 2) Connected.	Connected.	Unclear whether separated or connected.	All connected & 1) Accented.	1 & 2) Connected. 3 & 4) Separated. 2) Accented. 3) Swell. 4) Plain.	All connected. 2 & 3) Articulated.
Execution	On string.	Played with "exact equality."		1) Played in middle part of bow. 2) Played in middle part or at tip. 3) Use little bow & place bow close to bridge. 4) Played at tip.	Played with steady upper arm; in upper part of bow; perfectly equal in power and duration.	Played in any part of bow; attack from wrist.	1) Increased bow speed produces accent; use whole bow. 2) Played with at least half of bow; in any part of bow. 3) Played above middle of bow.	1) Played in any part and with any amount of bow. 2) Use bow pressure and speed for accent. 3) Graded bow pressure & speed producing the swell. 4) Great initial bow speed.	Rotary motion of upper arm occurs in execution.

CHAPTER VII

LEGATO

The Italian word "legato" means bound or tied. In violin playing, it means to connect the notes smoothly. The smoothness can be achieved by playing two or more notes in one bow stroke--slurring the notes--or by making the bow changes imperceptible.

Violinists using pre-Tourte bows achieved legato by slurred bowings; after Tourte standardized the bow, violinists were able to play the separate bowings in a legato style. The challenge a violinist must overcome in playing legato is to make the change of bow and string crossing smooth.

The Eighteenth Century

In the eighteenth century, the legato was achieved by slurring notes together. In teaching the slurred bowing, the eighteenth-century pedagogues paid attention to the relationship between the direction of bow movement and the direction of the string crossing, i.e., from a lower string to a higher one or vice versa. They also suggested using longer bow strokes and finger motion to achieve smooth bow change.

Geminiani: Bowing Exercise

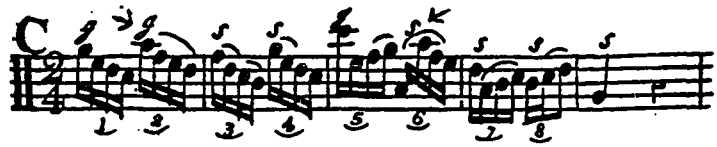
Among the twenty-four "Examples" in Geminiani's The Art of Playing on the Violin, are a few bowing exercises including two which are for slurred bowings. Geminiani does not provide instruction about playing the slurred notes, but by examining his examples, his concept of legato bowing can be understood.

In playing a slur, it is easier to play a down bow from a lower string to a higher one than from a higher string to a lower one. It is also true that an up bow can be more naturally played from a higher string to a lower one than the opposite. In playing a down bow, if the bow moves from a higher string to a lower one the hand moves downward in the down-bow motion and also upward for the change of strings, making the movement of the hand quite complex. If the bow moves from a lower string to a higher one, only the downward movement of the hand is needed for both the down bow and the change of strings; thus, the movement of the hand becomes simpler. It is the same in the case of playing an up bow.

In the following example, from Example 16 in Geminiani's treatise, "awkward" bowings appear; that is, during a down bow the bow moves from a higher string to a lower one and during an up bow it moves from a lower string to a higher one. The letters "g" and "s" in this example

indicate down and up bows;[1] and the arrows, marked by this writer, indicate the "awkward" bowings.

Ex. 1: Geminiani, The Art, 22.



There are abundant similar "awkward" bowings in this Example and also in Example 17 of The Art of Playing on the Violin, the other slurred bowing exercise provided by Geminiani. Geminiani has apparently included the "awkward" bowings purposefully. He writes:

> The Learner should be indefatigable in practising this Example till he has made himself a perfect Master of the Art of Bowing. For it is to be held as a certain Principle that he who does not possess, in a perfect Degree, the Art of Bowing, will never be able the [*sic*] render the melody agreeable nor arrive at a Facility in the Execution.[2]

Geminiani does not write any instruction for the twelve Compositions because he thinks that after learning the Examples the student should then know how to perform them. In the Compositions, the slurred bowings are natural. The following example is from Composition 4.

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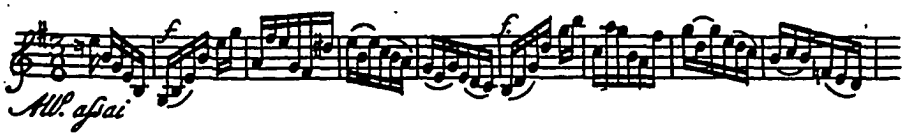
[1]Geminiani, The Art, 6.

[2]Geminiani, The Art, 6.

Ex. 2: Geminiani, The Art, 38.

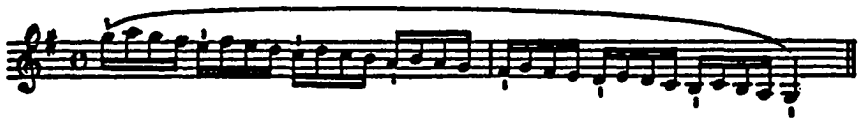


In measures 2 and 6 of the example above, two slurred down bows are from the G string to the D string. In measure 5, the second slur, which is an up bow, is from the D string to the G string. When writing the Compositions, Geminiani makes the slurred bowing as natural as possible.

Mozart: Long Legato Bowing

Mozart is also aware of the relationship between the bow direction and strings in slurred bowings. He instructs students to practice the following example first with an up bow and then with a down bow to gain "great profit."[3] It is easier to play this example with an up bow than with a down bow.

Ex. 3: Mozart, 118.



In addition to easier hand movements, the actual usable length of the bow becomes longer in playing an up bow from a higher string to a lower one than from a lower string to a

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[3]Mozart, 118.

higher one, and thus more notes can be played on one stroke, making the bowing easier. However, in playing the above example, it will be more difficult to produce the accents with an up bow than with a down bow which Mozart instructs students to practice also.

In the above example, Mozart marks the first note of each beat with a strong emphasis in the bow thus distinguishing it from the others. Similar markings appear also in several other examples. Mozart's instruction is contrary to Geminiani's, who cautions the learner "against marking the Time with his Bow." Geminiani continues:

> . . . if by your Manner of Bowing you lay a particular Stress on the Note at the beginning of every Bar, so as to render it predominant over the rest, you alter and spoil the true Air of the Piece, and except where the Composer intended it, and where it is always marked, there are very few Instances in which it is not very disagreeable.[4]

The difference between Mozart and Geminiani is one of aesthetic opinion. Mozart's slurred bowing is vigorous and rhythmic but will lessen the legato effect, while Geminiani's bowing is more smooth.

Compared to Geminiani's example, Mozart's legato bowing is much longer. Considering the bow Mozart uses, which is shorter than the modern bow, his bowing is remarkable and foreshadows the concept of long bowings of later periods.

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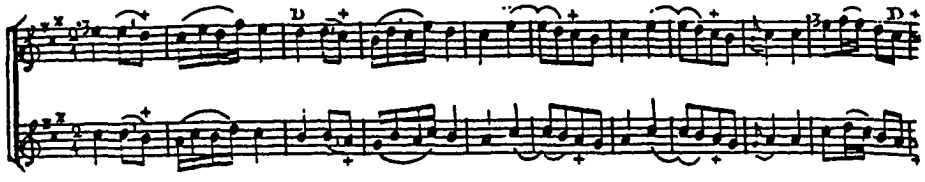
[4]Geminiani, The Art, 9.

Mozart's at-the-frog hand position makes the long bow stroke possible, while Geminiani's "at-a-distance" position is naturally suitable for shorter strokes.

L'Abbé le fils: Shifting and Right Hand Finger Motion

For slurred bowings, L'Abbé le fils considers not only the right hand but also the left hand. He is careful in designing fingerings for slurred bowings, and uses left hand shifting to play a passage on one string to achieve consistent tone color and smoothness, which the earlier treatises are not concerned about. The following example is from the First Suite of Opera Airs in Principes du violon:

Ex. 4: L'Abbé le fils, 22.



In the example above L'Abbé le fils indicates that the first violin part of this duo starts in the second position, and uses the letter "D" (descendre) to indicate that the left hand shifts to a lower position. In measure 3 the left hand shifts to the first position and in measure 10 back to the second position. By using this fingering, L'Abbé le fils plays the whole line on the A string and thus can achieve

not only the same tone color but also make the playing more legato because there is no string crossing involved.

L'Abbé le fils is among the first to mention right-hand finger motion in bowing. He writes: ". . . the fingers should naturally make imperceptible movements which contribute very much to the beauty of sound."[5] He does not explain how the finger movements make this contribution, and neither does he make it clear whether the finger movements contribute to the nuances of the strokes or making the bow change imperceptible. The ideal bow strokes of the eighteenth century start softly and end softly as reflected in Geminiani's and Mozart's methods. It is natural that L'Abbé le fils uses finger movements to create the nuances. However it is also possible that L'Abbé le fils foreshadows the nineteenth-century concept of imperceptible bow change by using finger motion.

Well-controlled finger movements can make the bow change imperceptible. But, it is still not until the nineteenth century that pedagogues discuss clearly the topic of imperceptible bow changes.

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[5]The original text is: ". . . les doigts feront naturellement des mouvemens imperceptibles qui contribueront beaucoup à la beauté des sons." (L'Abbé le fils, 1.)

The Nineteenth Century

The nineteenth-century pedagogues were more interested in discussing imperceptible bow change than in discussing string crossing, providing more information about the former. Their methods also presented the nineteenth-century trend of using long slurred bowings.

Baillot: Soft Bow Change

Baillot believes that to make the bow change imperceptible the sound should be soft at the moment the bow changed direction, using the hand to lessen the pressure on the bow and to make the sound soft.[6] When examining the playing of sustained sounds, Baillot discusses his way of making imperceptible bow changes:

> Avoid letting the change of bow or the slightest jerk be heard, whether at the frog or the tip; in order to accomplish this, when the frog approaches the bridge, grip the stick with the thumb so that it does not weigh upon the string. When the bow change is at the tip, lighten the hand quickly so the beginning of the note played up-bow is not heard.[7]

He also uses a diagram to show the shape of the sustained tone. In the following example, the round ends of the diagram indicate the soft start and end of each stroke.

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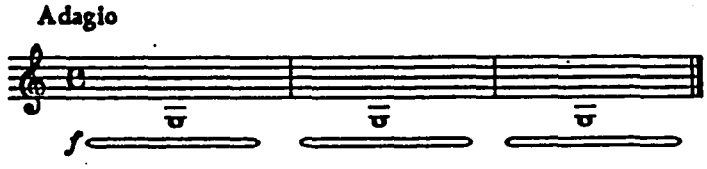
[6]Baillot, The Art, 228.

[7]Baillot, The Art, 228.

Ex. 5: Baillot, The Art, 228.



Baillot's writing and diagram show clearly that the beginning and ending of each tone are soft. However, this softness is different from that of Geminiani's and Mozart's tones. Geminiani and Mozart produce the softness for nuances while Baillot produces it for imperceptible bow change.

Baillot provides several exercises for string crossing in his book. The following example is from one of them:

Ex. 6: Baillot, The Art, 221.

However, Baillot does not offer any instruction about the execution, only stating that this bowing should be used "only very sparingly."[8]

Spohr: Inaudible Bow Change

Spohr discusses briefly the problem of string crossing in his Violin School. The following example is from one of Spohr's bowing exercises:

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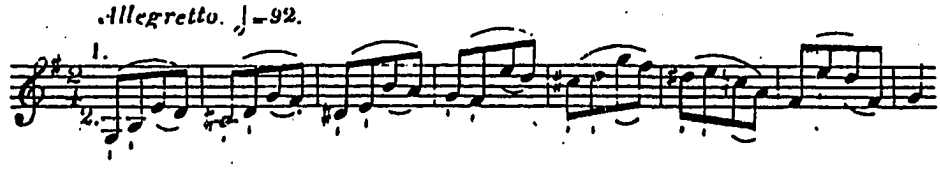
[8]Baillot, The Art, 221.

Ex. 7: Spohr, Violin School, 124.



He writes:

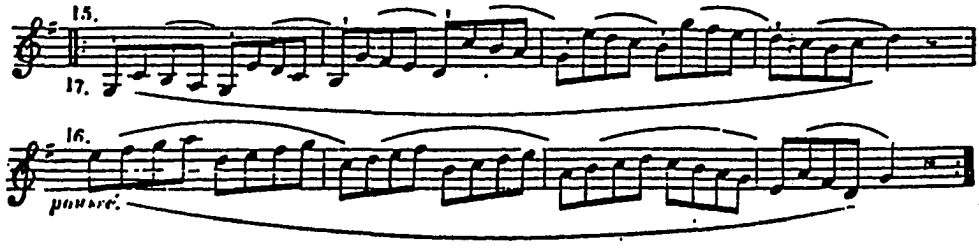
> The first ten numbers of the bowings are all played with a steady back arm, and the upper-third-part of the bow, or even shorter strokes.
>
> The rocking of the bow on the strings at No. 1 is produced entirely by a movement of the wrist.

The rocking of the bow Spohr refers to is actually the string crossing. These are not long bowings and Spohr uses only the wrist to accomplish the string crossings.

Spohr is also concerned about the bow change. He writes about his exercise (Ex. 8) for slurred bowing:

> At No. 16, however, the change in the strokes of the bow should be inaudible, and all the notes are given with a perfect uniformity of tone. This we must also endeavour to attain at No. 17, by an equal division of the bow.[9]

Ex. 8: Spohr, Violin School, 120.



[9]Spohr, Violin School, 120.

Spohr not only advises making the bow change inaudible, but also marks the slurs to cross the barlines. In this way the bow changes will not fall on the down beats and the whole passage becomes even more smooth.

The No. 17 bowing in the example above shows the nineteenth-century trend of making longer and longer slurred bowings. To play this long slurred bowing, Spohr's instruction is to use "an equal division of the bow."

Although Baillot and Spohr are concerned about the legato playing, their instructions are brief. The twentieth-century pedagogues have more to say about legato bowing.

The Twentieth Century

The twentieth-century pedagogues were also concerned about the bow change and they were more interested than their predecessors in discussing string crossing. They offered detailed information in their writings and provided different methods of making bow change and string crossing.

Auer: Negation of Angles

In Auer's Violin Playing as I Teach It (1921), he criticizes the contemporary musical development for its lack of melody: ". . . melody, genuine melody has suffered, and its medium of expression, the vocal or instrumental legato,

has been thrust into the background."[10] But he attests that in violin music the violin "is still a homophone instrument, a melody instrument, a singing instrument. Its chief beauty in expression is still the cantabile melody line."[11] He regards the legato bowing as "one of the strokes most used," because it is "the melody-producing stroke."[12]

Auer discusses the string crossing in legato bowing. He writes: "Legato is really the negation of angles in violin playing."[13] He does not go into detail about this, but he probably refers to the bow movements in legato bowing, implying that the bow movement should be curved instead of angular when the bow moves from one string to another. According to Auer, the wrist plays a major role in string crossing and is supported by the forearm. He is cautious about the arm movement:

> But this movement of arm as it passes over the various strings, must be made in an almost imperceptible manner, without any trace of brusqueness.[14]

He suggests practicing the following exercise (Ex. 9) to perfect the legato bowing.

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[10]Auer, 82.

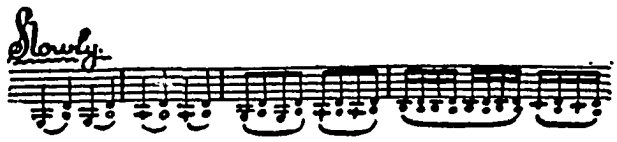
[11]Auer, 82.

[12]Auer, 82.

[13]Auer, 80.

[14]Auer, 79.

Ex. 9: Auer, 79.



His recommendation is to place the bow on the two strings and play without pressure or dynamic change. This exercise should be played first very slowly in quarter notes, then in eighths and sixteenths. After a period of practicing, one will be able to play a large number of notes on one stroke.

Auer brings out another issue related to the left hand but important to legato. He states:

> In order to secure a really perfect legato, the fingers which rest on the two strings must keep their place while the bow moves from one to the other. By raising either of the fingers the continuity of the tone is broken, and a species of stuttering is evident in the tone production.[15]

Auer views holding fingers down on strings to be a general rule for playing legato. The finger should be held on the string played until after the next string starts to sound, providing more smooth string crossing.

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[15]Auer, 80.

Flesch: Wavy Movements

Flesch discusses the change of the bow, stating that the movements of finger, wrist, and arm should be as slight as possible:

> . . . the necessary movement should be as slight and inconspicuous as possible. An over-extended flinging about of the hand or finger is the very thing producing that jerk which is to be avoided at all costs. Good change of bow is inaudible and well-nigh invisible.[16]

Flesch provides more information about string crossing. He has a statement similar to Auer's and writes that the arm and hand movements should not be angular when changing strings:

> . . . it must be clear to everyone that correct change of string is secured only when the movements of the shoulder, lower arm or wrist essential to that end are no larger than necessary for the passing from one string to another, that the movements themselves are to be carried out in wavy and not angular fashion, and, finally, that up-bow and down-bow are taken according to the falling or rising change of string.[17]

Flesch does not explain why the up bow is suitable for the "falling" change of string, i.e., moving to a lower string, and the down bow is good for the "rising" change of string, i.e., moving to a higher string. However, he provides a detailed discussion about the arm and hand movements.

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[16]Flesch, The Art, 1:61.

[17]Flesch, The Art, 1:65.

According to Flesch, not only does the part of the bow to be used determine the movements of hand and arm, but the tempo of the music also plays an important role.[18] At a slow tempo, if the string crossing happens in the upper half of the bow, the upper arm rolls; at the lower half of the bow, the forearm does the work. At a fast tempo, the wrist moves vertically in the upper half of the bow and the forearm still controls at the lower half. The movements should be "wavy and not angular." Flesch uses one of Kreutzer's etudes as an example:

Ex. 10: Flesch, The Art, 1:61.

He also uses diagrams to show the wavy and angular movements. In playing the above example, if the bow is kept as close to the D and A strings as possible, the movement of the bow will be like Figure 6; Figure 7 shows the bow movement if the bow moves toward the G and E strings.

Fig. 6: Flesch, The Art, 1:61.

[18]Flesch, The Art, 1:61.

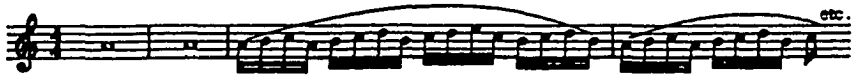
Fig. 7: Flesch, The Art, 1:61.

The arm and the bow have to move much greater distance in the angular movement than in the wavy one. Thus, the angular movement is considered wrong and the wavy movement is regarded as more practical.

Galamian: Smooth and Articulated String Crossings

For Galamian, legato means the slurring of two or more notes on one bow stroke.[19] He discusses two main problems related to legato: the first is concerned with the change of fingers in the left hand; the second with the change of strings. He gives an example to practice in solving the first problem:

Ex. 11: Galamian, 64.



According to Galamian, while playing the slurs, the right arm should feel the same as it does playing the open string whole notes.[20] The change of fingers in the left hand should not interrupt the smooth movement of the right arm.

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[19]Galamian, 64.

[20]Galamian, 64.

Galamian also states that if a change of left hand position occurs, the bow movement should slow down slightly and the pressure on the string should be lessened during the shifting motion of the left hand.[21]

The second problem is the change of strings. If more than one string is involved in a slur, the bow should move smoothly from one string to another. Galamian uses the following example to show how the smooth change of strings can be done.

Ex. 12: Galamian, 65.

The double stop appearing momentarily between the two notes secures the smoothness of the change of strings, but, Galamian cautions:

> This double stop should form so subtly that it is not possible to distinguish either the exact moment of its beginning or the instant of its termination.[22]

The idea of using the double stop implies two concepts about string crossings: the holding down of fingers on strings, similar to Auer's idea; and curved bow movement, similar to Flesch's wavy bow movement.

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[21]Galamian, 64.

[22]Galamian, 65.

According to Galamian, if the bow changes back and forth between two strings many times on one stroke, finger action in conjunction with forearm rotation is to be used at the lower part of the bow and a swinging action of the hand at the wrist replaces the other motions at the tip of the bow.[23] Galamian's description of the movements of the arm and hand is similar to Flesch's description of fast tempo movements. The difference is that Galamian uses finger and forearm motions in the lower part of the bow while Flesch only mentions forearm action.

Generally speaking, in order to play legato the bow should move from one string to another as smoothly as possible. Nevertheless, Galamian describes an exception. He writes:

> Complete smoothness in changing strings will not always be desirable in legato (slurred) playing. Where a rather percussive finger-articulation is indicated (as, for instance, in a loud scale or arpeggio run), a too-smooth change of string on the part of the bow will disturb the unity of the passage, because the smoothness of the change of string will be out of character with the articulation of the rest of the notes by the left hand.[24]

The example he uses is from Lalo's Symphonie espagnole:

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[23]Galamian, 65.

[24]Galamian, 65.

Ex. 13: Galamian, 66.

Lalo: *Symphonie espagnole*, Op. 21
First movement (measures 65–66)

* Articulate the changes of string with the bow.

| Articulate by lifting the preceding finger, half pizzicato, in a sideways direction.

In playing the above example, articulated string crossings are required at places marked with asterisks, but Galamian does not explain how to execute the articulated string crossings. It can possibly be done by one or a combination of several ways at the change of strings: making the bow movement angular; applying more pressures on the bow; or making the bow speed faster.

According to Galamian, in mastering the bow change the most important issue is the ability to make the change of bow as smooth and as unnoticeable as possible.[25] He regards the movements of the fingers, hand, or arm in executing bow change as immaterial. Two other factors are important, as he writes:

> Yet the essence of the matter does not lie in the particular muscles or joints that should participate, but instead in two factors: (1) the bow has to slow down shortly before the change, and (2) the pressure has to be lightened, with both of these elements delicately and precisely coordinated.[26]

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[25]Galamian, 85-86.

[26]Galamian, 86.

Galamian describes a large pendulum, which slows down slightly before its smooth reversal of direction, as a perfect model for a good bow change. Galamian's instruction is similar to Baillot's. Both of them lessen the pressure at the bow change. The difference is that Galamian also slows down the bow speed, something Baillot does not mention.

Rolland: Sequential Movements

Rolland describes the movements of the arm, hand, and bow at the bow change as a sequential motion pattern. He compares this motion to a turning train:

> A sequential motion pattern can be compared to the movement of a turning train, in which the engine turns first and the rest of the train follows. Thus, in bow changes of slow or medium strokes, the powerful members lead (slight shifting of body weight, movements of the upper arm and forearm), and the hand and bow follow.[27]

Rolland's description of the change of bow coincides with his theory of total body action in violin playing. He asserts that the sequential actions bring about continuity of tone during bow changes and are conducive to legato sounds.[28] The sequential actions also bring about continuity of bow movement. According to Rolland, in a smooth bow change, the bow never stops completely. The bow

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[27]Rolland, 39.

[28]Rolland, 39.

change is similar to a turn in swimming, a short circle instead of an abrupt reversal of direction of the movement. Rolland describes the motion:

> The bow never needs to come to a complete stop, since the very slight turning of the stick during the bow change (toward the fingerboard at the tip and in the direction of the bridge at the frog) can assure the continuity of motion and sound while the bow momentarily ceases to progress in its up and down direction.[29]

Rolland indicates that the principle of continuous movement is valid in string crossings as well as in changing the bow. In slow bow strokes, the upper arm leads and the hand and bow follow during the change of strings. In fast strokes, the movement may be initiated in either the arm or hand. The bow should move from one string to another gradually. Rolland calls this movement "round string crossing" and refers to Ysaye's teaching concept that all string crossings should follow the curvature of the bridge.[30] Rolland's concept of "round string crossing" is similar to Auer's concept of "negation of angles," Flesch's concept of "wavy" movement, and Galamian's concept of the double stop in string crossing.

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[29]Rolland, 40.

[30]Rolland, 40.

Summary

Table 4 reveals the ways of playing legato. The eighteenth-century pedagogues paid attention to the problem of the relationship between the direction of the bow and direction of the string crossing; this relationship was not considered as important by the later pedagogues and only a few, such as Flesch, discussed it. In playing slurred bowings the bow moves naturally from a lower string to a higher one during a down bow and from a higher string to a lower one during an up bow. In doing so, the actual useable length of the bow hair becomes longer and more notes can be played on one stroke.

Although L'Abbé le fils might foreshadow the concept of imperceptible bow change through his use of finger movements, it was not until the nineteenth century that pedagogues discussed the problem of bow change in detail. Both Baillot and Spohr stated that in playing legato the bow change should be inaudible. The twentieth-century pedagogues were also concerned about the change of the bow and they offered their methods of executing the bow change.

The twentieth-century pedagogues were more interested than their predecessors in discussing string crossing and provided comprehensive information about this problem. In general, they agreed that during the change of strings the bow should make a curved instead of an angular movement.

Galamian suggested that for certain articulated passages the string crossings should not be completely smooth; instead, they should be articulated to match the other articulated notes.

Differences existed between twentieth-century pedagogues in executing the string crossings. Auer used mainly the wrist, supported by the forearm, to execute the string crossings. Flesch specified different movements of hand and arm for string crossings played in different parts of the bow and at different tempos. Galamian used finger action in conjunction with forearm rotation in the lower part of the bow, and a swinging action of the hand at the wrist for the upper part of the bow. Rolland applied his total body action theory in executing string crossings.

An important issue brought out by Auer and confirmed by Galamian was holding down the fingers of the left hand. In playing legato, the finger should remain on the string played until after the next string starts to sound to make the string crossing more smooth.

A quotation from Auer's Violin Playing as I Teach It is appropriate to conclude this chapter. He wrote:

> [The legato bow stroke] will continue to be one of the strokes most used, the stroke of them all which every violinist must develop in a really perfect manner if

his string-song is to be unbroken and his tone production equalized and connected.[31]

[31]Auer, 82.

TABLE 4: LEGATO

	Pre-Tourte Bow			Tourte Bow					
	The 18th Century			The 19th Century		The 20th Century			
	Geminiani	Mozart	L'Abbé le fils	Baillot	Spohr	Auer	Flesch	Galamian	Rolland
Left Hand Fingering			Using shifting to keep playing on same string.			Hold down fingers until bow reaches new string.		Double-stop concept.	
Bowing Direction	Down bow for changing from low string to high string, and up bow for changing from high string to low string.	Down bow for changing from low string to high string, and up bow for changing from high string to low string.					Down bow for changing from low string to high string, and up bow for changing from high string to low string.		
String Crossing					For short bowings, use wrist and upper arm is steady.	Negation of angles; wrist is major role in string crossing; forearm supports.	Wavy movements.	Double-stop concept.	Round string crossing.
Bow Change & Right Hand Finger Motion			Fingers make imperceptible movements at bow change.	Sound should be soft at moment bow changes direction; lessen bow pressure.	Inaudible bow change.		Movements of finger, wrist, and arm should be as slight as possible at bow change.	Slow down bow and lessen bow pressure just before a bow change.	Sequential movements.

CHAPTER VIII

MARTELÉ

Martelé, a French word meaning hammered, is a sharply accented and detached bow stroke. The accent is at the very beginning of the stroke and the bow pressure is released quickly after the start of the tone. The bow stops between notes and separates them. Executing the martelé involves changing the bow pressure and speed during the stroke, which produces a percussive type of sound.

The martelé stroke appeared after Tourte standardized the bow. Boyden believes that this stroke was unknown in early eighteenth century and Seagrave confirms that it was not used in violin playing until sometime late in the eighteenth century.[1] Seagrave also indicats that the earliest use of the term in the modern sense in a method book was probably in Woldemar's Grande méthode pour le violon published in 1800. It was natural that the martelé stroke did not appear until after the invention of the Tourte bow which was able and perfectly suitable to produce such a bow stroke.

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[1]Boyden, History, 394 and Seagrave, 29.

The Eighteenth Century

There are no indications of the martelé stroke in Geminiani's or Mozart's writings. The typical strokes they used start softly, swell in the middle, and end softly. None of their strokes had the explosive start of the modern martelé. L'Abbé le fils did use the term martelé in his method book, but in a sense different from the modern concept.

L'Abbé le fils: The Eighteenth-Century Martelé

L'Abbé le fils' martelé is a stroke that follows the port de voix, an ornament. He gives the following example:

Ex. 1: L'Abbé le fils, 15.

Notated:

Played:

The crescendo sign indicates the martelé. It seems that L'Abbé le fils uses the term to describe a bow stroke for which the bow moves like a falling hammer in an accelerating

movement, thus a crescendo. The modern usage of the term describes a bow movement similar to the hammer movement starting when the hammer hits the object and then returning to the original place, thus a percussive articulation and a release afterwards.

L'Abbé le fils' martelé with its lack of explosive attack is totally different from the modern martelé. The modern concept of the martelé is reflected in the writings of the nineteenth-century pedagogues.

The Nineteenth Century

For Baillot and Spohr, the martelé is a short bow stroke. Not only is the duration of the notes short, but the length of the bow stroke is also short, its usage being limited to the upper third of the bow.

Baillot: "Bite" with Wrist

Baillot's martelé has a "bite" at the beginning of the stroke and the "bite" is executed with a movement of the wrist. He gives his instructions on how to play this stroke:

> With the thumb pressed against the stick, "bite" each note quickly and evenly with a movement of the wrist.
>
> If the tempo is slower, and if, as a result, the bow stroke is longer, let the forearm follow a little as well.
>
> Leave the bow on the string without pressure after the note is played, and leave a short rest between each note.

> On the E string, lengthen the martelé a little in order to compensate for the thinness of the high sounds.[2]

Several points of Baillot's instruction are worth consideration. First, Baillot's martelé is a true modern one. The "biting" at the beginning of the stroke, leaving the bow on the string, and short rests between the notes, are all characteristics of the modern martelé. Second, Baillot's martelé stroke is small because it is played at the upper third of the bow. The stroke is a little longer if the tempo is slow or the E string is used. Third, Baillot executes the martelé mainly with the wrist; for longer strokes, the forearm follows "a little." Finally, Baillot presses the thumb against the stick. It is certain that the thumb provides counter pressure to the fingers, however, it is unclear which finger provides the necessary pressure upon the bow to "bite." Considering Baillot's principles for tone production (see Chapter V), it can be deduced that all of the fingers participate in providing the pressure.

Spohr: Sharp Pressure

There are two examples containing martelé strokes in Spohr's Violin School. He does not use the term "martelé" for the first one; however, the stroke (*fz* of No. 14 bowing

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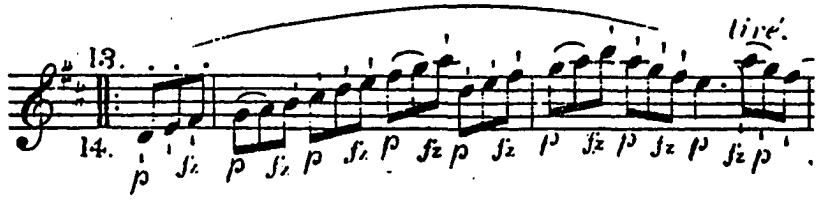
[2]Baillot, The Art, 174.

in the following example) possesses the characteristics of the martelé:

Ex. 2: Spohr, Violin School, 123.



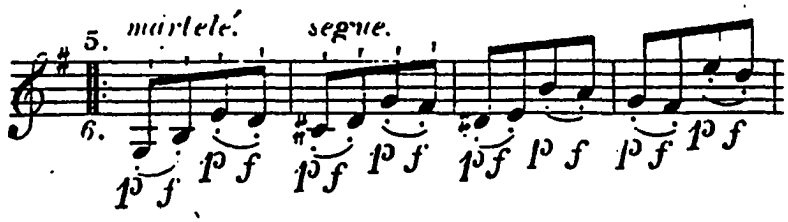
Spohr's instructions read as follows:

> At No. 14 the *fz* (forzando) note is marked as strongly as possible by a longer stroke of the bow and a sharp pressure of the same: the lengthened stroke, however, must not extend beyond the upper third-part of the bow.[3]

This stroke has a strong accent as indicated by Spohr, and in order to play it a "sharp" pressure is needed. The short vertical strokes under the notes indicate separation between notes. Similar to Baillot's martelé, this stroke is executed in the upper third of the bow.

Spohr uses the term "martelé" for the second example:

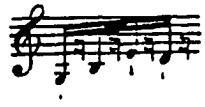
Ex. 3: Spohr, Violin School, 124.



[3]Spohr, Violin School, 123.

The No. 5 bowing is the martelé. It should be, as Spohr instructs, played with a "smart detaching."[4] This "smart detaching" might imply the initial "biting" of the stroke. The notes are clearly separated as shown in the following example:

Ex. 4: Spohr, Violin School, 124.



The sign Spohr uses is a short vertical stroke above or under the note, which Spohr also uses for the détaché (see Chapter VI). His advice is to play the martelé in the upper part of the bow and to let the bow stand still on the string for a moment after each note. However, the bow stroke must not be too short; otherwise the sounds will be dry and harsh. The notes should be equal in both duration and power.

The Twentieth Century

Some twentieth-century pedagogues continue the nineteenth-century short stroke tradition. However, for others in the twentieth century, the martelé can be played in any part of and with any length of the bow. Also, the twentieth-century pedagogues view the martelé as a

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[4]Spohr, Violin School, 124.

fundamental stroke which can be used as a technique-building device.

Auer: Martelé at the Point

Auer is among those who continue the tradition of Baillot and Spohr in terms of the length of the bow used for the martelé. His martelé stroke is even shorter than Baillot's and Spohr's because he plays it at the point of the bow and uses the wrist exclusively to execute this stroke. According to Auer, those who are unable to master this stroke by using the wrist only may apply a slight pressure of the forearm, but Auer warns that one should never use upper arm or shoulder pressure.[5]

In comparing the ways that Baillot and Auer execute the martelé, both similarities and differences can be found. Both of them play the martelé at the upper part of the bow, but Baillot plays in the upper third and Auer at the point. Both of them use the wrist to perform this stroke and allow the forearm to participate, but Baillot uses the forearm for longer strokes and Auer uses the forearm to assist the wrist in exerting pressure on the bow.

Auer views the martelé stroke as an important means to develop bowing technique, stating that it "is in itself very essential, and its use presents the additional physical

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[5]Auer, 70.

advantage of reinforcing the muscles of the wrist."[6] He believes that this stroke is "the basis of two other forms of the stroke: the staccato and the 'dotted note' strokes."[7] His viewpoints are shared with other twentieth-century pedagogues.

Flesch: Pressure Pause

Flesch classifies the martelé as a short stroke. He explains his classification:

> Hence, in using the term "short strokes" we mean above all a stroke separated from the preceding and the following one by a plainly noticeable pause.[8]

According to this statement, determining whether a stroke is short or long does not depend on the duration of the stroke but rather on the separation of the stroke. Since there are "noticeable" pauses between the martelé strokes, the martelé is a short stroke. However, although Flesch claims that the duration is not a determining factor, his martelé is short in respect to the duration. Comparing the following example with Spohr's example (Ex. 4), it can be seen that Flesch's martelé stroke is shorter than Spohr's because in Flesch's

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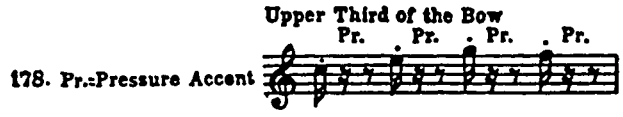
[6]Auer, 70.

[7]Auer, 70.

[8]Flesch, The Art, 1:68.

example the rests are longer than the notes and in Spohr's example the rests are equal to the notes.

Ex. 5: Flesch, The Art, 1:69.



Flesch indicates in the above example that the martelé stroke is played in the upper third of the bow, in the same manner as Baillot and Spohr. To produce the sharp accent of the stroke, he advises students to apply a very strong pressure on the string during the pause, which he calls the pressure pause, and to release it when the stroke begins. He also indicates that if the pressure lasts during the stroke, the tone will be forced.

Flesch describes how he executes the martelé stroke:

> The mechanics of this kind of stroke, usually carried out between the middle and the point, consist of the combination of an almost horizontal movement of the lower arm (during the stroke) with a slight inward and outward (supination and pronation) turning of the lower arm, before and after the pressure pause in the elbow-joint.[9]

Flesch errs by placing two words in reverse order. The words "supination" and "pronation" should be reversed, because supination is the outward turning mentioned and

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[9]Flesch, The Art, 1:68.

pronation is the inward turning. Nonetheless, from his description it is clear that he uses the turning of the forearm to control the pressure. The inward turning, or pronation, exerts the pressure on the string and the outward turning, or supination, releases it.

Galamian: Problem of Timing and Coordination

Like Auer, Flesch regards the martelé as an important means of developing bowing technique. Galamian shares a similar viewpoint, asserting that the martelé is the most fundamental of all strokes and that its mastery will benefit the right hand technique well beyond the limit of this particular bowing.[10]

According to Galamian, the martelé stroke can be played with any amount of the bow and in any section of the bow.[11] Compared to the previously discussed pedagogues in this chapter, who advocate that the martelé stroke is executed in the upper part of the bow, Galamian is much more advanced. Playing martelé in any part and with any amount of the bow offers not only more varieties of this stroke but also challenges in technical training.

Galamian compares the percussive elements and the singing tone in violin playing with the consonants and

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[10]Galamian, 70-71.

[11]Galamian, 71.

vowels in speech and song. The singing tone which has a smooth beginning and a smooth ending corresponds to the vowel sound and the tone with a percussive or accented articulation is the consonant sound. The martelé belongs to the consonant category. Galamian defines the martelé:

> The martelé is decidedly a percussive stroke with a consonant type of sharp accent at the beginning of each note and always a rest between strokes.[12]

Galamian believes that the correct execution of the martelé is mainly a problem of timing and coordination.[13] To execute the martelé, according to Galamian, the key is controlling the bow pressure. The pressure, which is exerted on the bow before it moves, is greater than the stroke itself will require. The bow should "pinch" the string, to use Galamian's word, before it moves. The pressure must be lessened to the degree required by the stroke immediately after the bow produces the sharp accent. The timing is important: if the pressure is released too soon, there will be no characteristic sharp accent; too late, the sound will be scratchy. In addition to the change of pressure, the bow speed also needs to be changed during a martelé stroke. The bow starts at a fast initial speed and slows down after the attack. Since there is a rest between

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[12]Galamian, 71.

[13]Galamian, 71.

the martelé strokes and pressure has to be exerted on the bow during the rest, martelé strokes can not be used in very fast tempos.

Galamian further discusses two kinds of martelé, which he calls the simple or fast martelé and the sustained martelé. The difference between these two is that in the simple martelé a short, rhythmic note follows the sharp articulation and in the sustained martelé there is a long sustained note following the explosive accent. The sign Galamian uses for the simple martelé is a wedge mark and for the sustained martelé a wedge mark above a short dash. The execution of these two kinds of martelé is essentially the same and only differs in playing the short or long note following the beginning of the stroke,

To execute the martelé, the bow basically remains on the string; but Galamian recommends lifting the bow slightly in the case of an up bow that ends near the frog, to avoid a terminal scratch. He writes that there are three principal elements in executing the martelé:

> . . . (1) the motion of the arm, (2) the horizontal finger motion . . ., and (3) the pressure of the fingers on the stick of the bow for the bite in the sound.[14]

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[14]Galamian, 72.

According to Galamian, the action originates "in the whole arm" in all martelé strokes except for the smallest strokes which are performed by the hand and fingers.[15] Galamian advises the use of the fingers to set the pressure, yet when the stroke is played at the point of the bow the wrist and the forearm assist in setting the pressure. The wrist should be somewhat lower, the forearm slightly pronated, and the base knuckles of the fingers are somewhat lowered.

Similarities and differences exist between Galamian's and Flesch's manners of executing the martelé. Both of them use the arm to originate the action and both turn the forearm to exert pressure on the bow. However, Galamian uses only the hand and fingers to play the small martelé strokes. Also, while Flesch uses turning of the forearm as a main force, Galamian uses it merely as a supplementary force to the fingers in strokes played at the point of the bow. Flesch limits the martelé strokes to the upper part of the bow, like Baillot, Spohr, and Auer, while Galamian uses any part and any length of the bow to play the martelé.

Rolland: Swinging Motion of the Elbow

Rolland agrees with Galamian that the martelé stroke can be played in any part of the bow. He advises students to practice this stroke near the frog, at the middle, and

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[15]Galamian, 71-72.

near the tip. Also, he instructs students to use short and long bows, including the whole bow, in practicing the martelé stroke.[16]

Rolland also agrees with Auer, Flesch, and Galamian that the martelé is useful in developing right hand technique. He believes that sensitivity and control in contacting and releasing the string may be developed through the martelé bowing.[17]

Rolland defines the martelé:

> Each stroke starts with a bite. The hair dips into the string before it is moved. As the bow moves quickly, the pressure is slightly reduced. Stop the bow suddenly and prepare for the next stroke. We call this the martelé stroke.[18]

Producing a crisp bite at the beginning of the stroke is crucial in executing the martelé. Rolland uses the weight of the bow and the arm as the main sources of pressure. He writes about the manner in which he executes the martelé stroke:

> Think of the martelé-accent as resulting from an action in which the weight of the bow completely rests on the string and additional weight is applied by the relaxed, hanging arm. With each short stroke, much of this weight is suddenly released from the string, but only for a moment while the bow is in motion. Immediately

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[16]Rolland, 141-42.

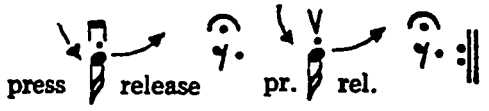
[17]Rolland, 141.

[18]Rolland, 144.

> upon completion of a quick stroke, the weight of the bow and arm is again allowed to rest on the string.[19]

The arm motion is important in Rolland's execution of the martelé. The pendulum-like swinging motion of the elbow in tone production and in executing the détaché[20] is applicable for the martelé. According to Rolland, the swinging motion of the elbow (rising during down bow and dropping during up bow), caused by pronation and supination of the upper arm, will increase the pressure on down bows and decrease the pressure on up bows, but if this motion becomes more pronounced and abrupt it will release the pressure in both down and up bows.[21] The swing motion causes the hand to move along a curved line (see the following example), and since the pressure is released the crunch at the end of the martelé stroke is eliminated. Rolland uses the following example to illustrate the execution of the martelé.

Ex. 6: Rolland, 142.



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[19]Rolland, 141.

[20]See Chapters V and VI.

[21]Rolland, 141.

Both Flesch and Rolland use pronation and supination movements[22] of the arm in executing the martelé stroke. However, the pronation and supination occur in the forearm in Flesch's execution and in the upper arm in Rolland's. Also, in Flesch's execution, the forearm's movement changes from pronation to supination during one stroke, either down or up. In Rolland's execution, the pronation of the upper arm occurs during a down bow and the supination happens during an up bow.

Summary

The martelé is a bow stroke developed after Tourte standardized the bow. Although L'Abbé le fils used the term in his method book, his usage was different from today's concept. All of the nineteenth-century and twentieth-century pedagogues agree on the definition of martelé. The two most important characteristics of the martelé stroke are the "pinching" (Galamian's term) or "biting" (others' term) at the very beginning of each stroke and the separation between the notes. Table 5 presents the characteristics and execution of the modern martelé stroke of different pedagogues.

The martelé is a kind of short stroke, determined not by the duration of the note but by the separation between

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[22]The terms used by Rolland are counterclockwise and clockwise rotations.

the notes. However, most martelé strokes are short in terms of both the duration of the notes and the amount of the bow used. The nineteenth-century and early twentieth-century pedagogues advocate playing the martelé strokes in the upper part of the bow. Some, such as Baillot, Spohr, and Flesch, use the upper third of the bow; some, such as Auer, use the point of the bow. The pedagogues of the second half of the twentieth century, such as Galamian and Rolland, allow the martelé strokes to be played in any part and with any amount of the bow.

The martelé is an on-the-string stroke. The bow remains on the string in the execution of the stroke and stays still during the pauses between the notes. Galamian recommends lifting the bow slightly for the martelé stroke ending at the frog to avoid a terminal scratchy sound and to reset the bow on the string to prepare the next bow.

Since the initial explosive articulation is the most important characteristic of the martelé stroke, to execute it correctly is crucial. The pedagogues agree that the pressure necessary to produce the sharp accent is exerted on the bow during the pause, which Flesch calls the pressure pause. Once the bow moves and produces the percussive accent the pressure must be lessened. Bow speed should also be changed during the stroke. The bow starts with a fast speed and slows down after the initial articulation. In

Galamian's opinion, the execution of the martelé is mainly a problem of timing and coordination.

It is in the execution of the martelé stroke that the pedagogues differ greatly. They can be divided into three groups. The first group uses mainly the hand or the wrist; the second group, the forearm; and the third group, the whole arm. Baillot and Auer belong to the first group, and both of them allow assistance from the forearm. Flesch belongs to the second group, and Galamian and Rolland are of the third group.

It is unclear to which group Spohr belongs. He does not specify how he executes the martelé. However, since he uses only the upper third of the bow for martelé strokes, and considering that he plays the détaché with a "steady back-arm" (see Chapter VI), it is unlikely that he would use the upper arm for the martelé.

TABLE 5: MARTELÉ

	Tourte Bow					
	The 19th Century		The 20th Century			
	Baillot	Spohr	Auer	Flesch	Galamian	Rolland
Term	Martelé.	Martelé.	Martelé.	Martelé.	1) Simple or fast martelé. 2) Sustained martelé.	Martelé.
Marking	Dot.	Vertical stroke.		Dot.	1) Wedge. 2) Wedge above dash.	Dot.
Characteristic	Short; bite at beginning of stroke.	Short; strong accent.	Very short; accented.	Short; accented.	Short or long (still separated); sharp accent; percussive.	Short; bite at beginning of stroke.
Execution	Played in upper third of bow; bite with wrist; forearm assists for longer stroke; thumb presses bow stick; leave bow on string without pressure after each note played.	Played in upper third of bow; sharp pressure for accent; bow stops after each note played.	Played at point; exert pressure with wrist; forearm may assist in exerting pressure.	Played in upper third of bow; apply strong pressure during pressure pause; release pressure when stroke begins; rotary motion of forearm for controlling pressure.	Played in any part of and with any amount of bow; bow pinches string before it moves; pressure lessened immediately after accent; timing is important; fingers set pressure; wrist and forearm assist; change bow speed during stroke.	Played in any part of and with any amount of bow; use weight of bow and arm for pressure; swing motion of elbow (rotary motion of upper arm) for controlling pressure.

CHAPTER IX

SPICCATO

The term "spiccato" has had a variety of meanings. It is an Italian word meaning distinct, conspicuous, clear, (marcato) marked, or strong. In the eighteenth century, it was a synonym for staccato in musical usage, meaning detached or separated. Although the eighteenth-century pedagogues did not use this term for bowings, they used lifted bowings which are similar to the modern spiccato. However, the sound of their lifted bow strokes was different from that of the modern spiccato, because they used bows different from the modern bow. "Spiccato" came to denote a bounced bowing in nineteenth-century violin playing. The early twenty-century pedagogues used the term to indicate a fast, short stroke called "sautillé" by later violinists. The sautillé is a bouncing stroke, in which the bow bounces but the bow hair is not off the string and there is no lifting of the bow for each individual stroke. In the second half of the twentieth century, "spiccato" refers specially to a particular off-the-string bowing which is slower than the sautillé.

The discussion in this chapter will focus on those varieties of lifted or bouncing strokes in which only one

note is played per stroke. Essentially, the bow is either off the string or bouncing on the string.

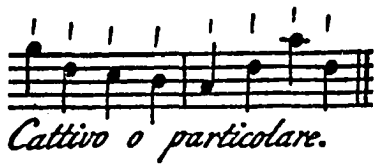
The Eighteenth Century

The stick of the pre-Tourte bow is less elastic than that of the Tourte bow, and is not suitable for bouncing bow strokes. When the bow direction is changed, there is a separation between the notes, caused by the bow's "give" quality. However, if a longer separation between the notes is desired, the bow is lifted off the string. The eighteenth-century pedagogues call this bowing "staccato." The common sign for this stroke is a short vertical stroke.

Geminiani: Cattivo and Buono Strokes

Geminiani indicates a specific stroke in Example 20 of his The Art of Playing on the Violin and defines this stroke as "staccato." He marks the stroke with a " | " sign and recommends taking the bow off the strings after every note. Tempo determines whether the use of this stroke is "good" or "bad." Geminiani comments that the bowing of the following example is "Cattivo o particolare" (bad or particular). The tempo of this example is Adagio or Andante:

Ex. 1: Geminiani, The Art, 27.



This stroke becomes "good" (Buono) in the following example in which the tempo is faster:

Ex. 2: Geminiani, The Art, 27.

Geminiani indicates that the tempo of the above example is Allegro or Presto. At this speed, the stroke is similar to a modern spiccato, although his bow may produce a different sound. If the speed is even greater, the bowing becomes bad (Cattivo) again. In the following example, also at Allegro or Presto, the eighth notes become sixteenth notes and thus the bow strokes are twice as fast:

Ex. 3: Geminiani, The Art, 27.

For Geminiani, this stroke is appropriate only for eighth notes at a tempo of Allegro or Presto and not suitable for slower or faster tempos. He does not explain why this stroke is proper for only a certain tempo, nor does he give instruction regarding the execution of the stroke.

Mozart: Lifted Strokes

Mozart does not use the terms spiccato or staccato for bowings, but he does mention a bowing which is similar to the modern spiccato. He writes:

> Merry and playful passages must be played with light, short, and lifted strokes, happily and rapidly; just as in slow, sad pieces one performs them with long strokes of the bow, simply and tenderly.[1]

He does not give any examples for this bow stroke; but from his description, it is obvious that the stroke is off-the-string and fast. Although the sound effect of this stroke is different from that of the modern spiccato, which is caused by the characteristics of the bow, from the viewpoint of a modern violinist, the "light, short, and lifted strokes" are a spiccato bowing.

L'Abbé le fils: No Mention of Spiccato Strokes

L'Abbé le fils does not mention lifted bowings in his Principes du violon, except for a kind of staccato bowing which will be discussed in the next chapter. It is unclear whether the lack of discussion on the lifted bowing in his method book is a foreshadowing of the early-nineteenth-century preference for "on-the-string" bouncing strokes, in

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[1]Mozart, 223.

which the bow bounces but does not actually leave the string.

The Nineteenth Century

Stowell writes about nineteenth-century practice:

> The lifted bow stroke plays a less prominent role in early-nineteenth-century technique, in which cantabile playing and the new resilient qualities of the Tourte bow were increasingly exploited.[2]

Curiously, the exploitation of bowings using the elasticity of the bow is not considered by Spohr in his Violin School. However, it is reflected in the writing of Baillot.

Baillot: Using the Elasticity of the Bow

Baillot discusses four types of bow strokes produced by using the elasticity of the bow: light détaché, perlé, spiccato, and ricochet. The light détaché and the perlé are basically the same stroke, with the difference that the perlé is a faster and smaller stroke. The ricochet is beyond the scope of the current discussion because it requires more than one note to be played per stroke.

Baillot advises that the light détaché be played in the middle third of the bow:

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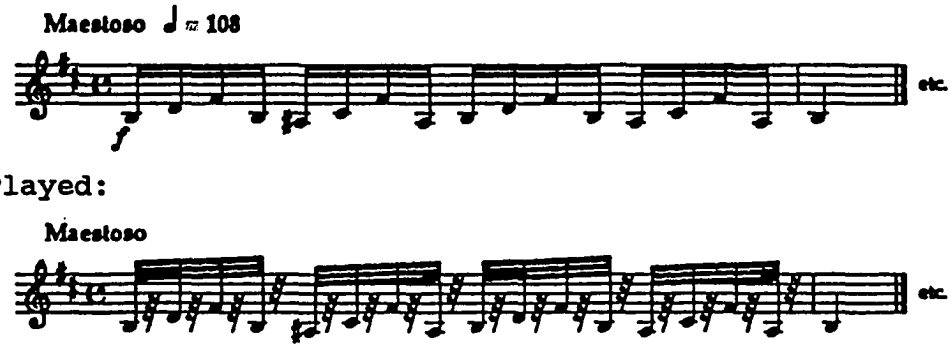
[2]Stowell, Violin Technique, 195.

> Hold the bow on the string very lightly. Separate each note, taking advantage of the elasticity of the stick to give an imperceptible and slightly elongated "bounce."[3]

He gives an example:

Ex. 4: Baillot, The Art, 186.



This is an "on-the-string" bow stroke, yet it produces an off-the-string effect because of the "bounce" of the bow stick. The notes are clearly separated as shown in the second part of Baillot's example.

According to Baillot, to play the perlé, the same basic principles are applied, but the speed is faster and very little bow should be used.[4] The term derives from the sound quality, which is described by Baillot as "round as pearls."[5] Baillot's light détaché and perlé belong to the

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[3]Baillot, The Art, 186.

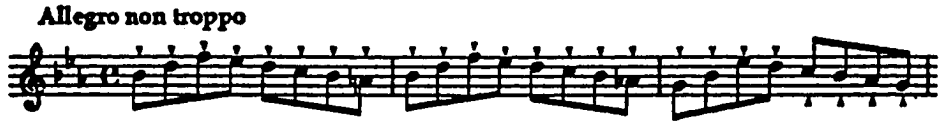
[4]Baillot, The Art, 186.

[5]Baillot, The Art, 163.

category of the modern sautillé. There is no special sign for the light détaché, but Baillot uses a wedge sign for the perlé.

Baillot also uses the wedge sign for the spiccato stroke, which he uses for "very detached" notes. He gives this example:

Ex. 5: Baillot, The Art, 187.



About the spiccato stroke, Baillot writes: "Make the bow bounce lightly in the same place, leaving the string a little."[6] He also indicates in a diagram that this stroke is played at the middle of the bow.[7] This is an off-the-string bow stroke, and the sound must be very dry because only the middle of the bow is used and the bow bounces in the same place.

Spohr: No Mention of Spiccato or Bouncing Strokes

It is notable that Spohr neither discusses nor mentions any spiccato or bouncing bow strokes in his Violin School. Nonetheless he recommends the Tourte bow to students, and

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[6]Baillot, The Art, 187.

[7]Baillot, The Art, 187.

writes that the superiority of the Tourte bow consists first in the "sufficient elasticity of the stick." The lack of discussion of spiccato or bouncing strokes in his book is an indication that such strokes were not yet widely used in the early nineteenth century.

The Twentieth Century

Spiccato and sautillé are common strokes in the twentieth century. However, early in the century, the terms "spiccato" and "sautillé" had vague meanings and were interchangeable. In the second half of the century, these terms have come to denote specific bowings: the former indicates a lifted stroke, the latter a bouncing stroke.

Auer: Spiccato Sautillé

The term Auer uses for a bouncing stroke is "spiccato sautillé," which he describes as "spiccato with bouncing, springing bow." This stroke is called by later violinists "sautillé." The term used by Auer indicates that at the time of his book's publication, in 1921, spiccato and sautillé were used interchangeably.

Auer's spiccato is an "on-the-string" bow stroke, in that the bow is not lifted off the string but bounces with the hair remaining on the string. The stroke is developed from the short détaché. Auer advises students to practice a very slight détaché in the middle of the bow, which stays

well on the string and is accomplished with the wrist only.[8] Practice of the stroke should start at a moderate tempo, and the speed may be gradually increased. Auer then writes:

> In order to secure the spiccato, all that is necessary is to relax the pressure of the fingers on the bow, while going on with the same movement of the wrist used for the short detached stroke . . ..[9]

According to Auer, the movement of the wrist is very important in executing the spiccato stroke. He recommends practicing the following example to gain agility in the wrist.

Ex. 6: Auer, 74

By giving this example, in which string crossings are involved, Auer may be implying that the wrist needs to move vertically as well as horizontally. The vertical movement of the wrist will facilitate the bouncing of the bow on the strings.

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[8]Auer, 73-74.

[9]Auer, 74.

Flesch: Thrown Stroke and Springing Stroke

Flesch's writing confirms that the meanings of the terms "spiccato" and "sautillé" were indistinct in the early twentieth century. He views these terms as "indefinite" and prefers to use "thrown stroke" and "springing stroke" as terms.[10] He explains these terms as follows:

> In the thrown stroke the player is active, the bow passive; I throw the bow. In the springing stroke the player is passive, only watching over what the bow does; the bow is active, since, in consequence of its elasticity in the region of its balancing point, it must spring of itself, when not held down on the string by force. The type of stroke to be chosen depends on the tempo: in a slow tempo the bow must be thrown, in a rapid one it springs of itself.[11]

Flesch's explanation makes it clear that his thrown and springing strokes are respectively the equivalents of the modern spiccato and sautillé. Flesch does not provide much information about the execution of the thrown stroke, but discusses the springing stroke in detail.

Much as Auer does, Flesch develops the springing-stroke technique by playing small détaché strokes in the middle of the bow at its balance point. Then he allows the index finger to rest loosely on the stick, and the bow leaps up and down in an elastic manner. In performance, however, the

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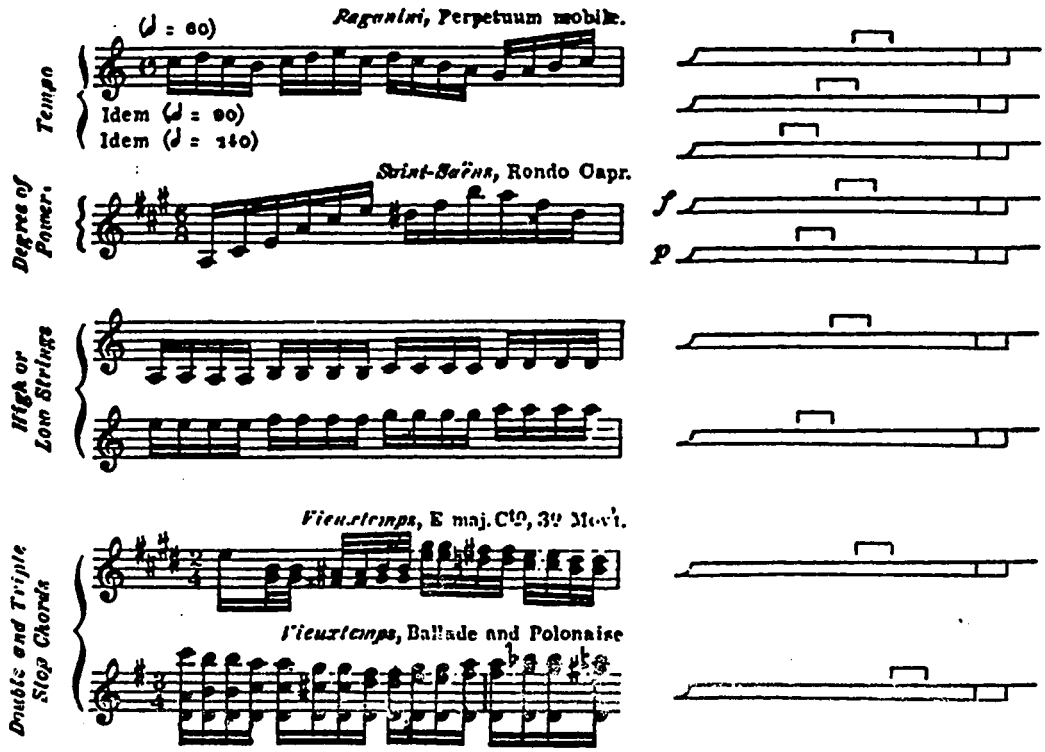
[10]Flesch, The Art, 1:73.

[11]Flesch, The Art, 1:73.

point of attack varies with the tempo of the music, the string(s) used, and the dynamics. Flesch uses Ex. 7 to show the part of the bow to be used. The example shows that in a slow tempo, in a passage of forte, on a lower string, and/or in double-stops or triple-stops, the attack point should shift toward the frog of the bow; for a fast and piano passage, or on a higher string, it moves toward the tip. Flesch also advises that the bow stick should never incline toward the fingerboard, to avoid diminishing the elasticity of the bow.[12]

Ex. 7: Flesch, The Art, 1:74.



[12]Flesch, The Art, 1:74.

With regard to whether the lower arm or the wrist should be used to produce the springing stroke, Flesch states that the wrist movements should only be applied when the use of the arm in quick tempo seems clumsy. According to Flesch, to play sixteenth notes in a tempo in which a quarter note equals 60 M.M., the "shoulder movement" rules, with quite negligible participation of the wrist; at 90 M.M., the wrist dominates; and at 120 M.M., the wrist is exclusively used.[13]

According to Flesch, to play the springing stroke, the little finger should be raised from the bow stick, except when the strokes are played at the lower half of the bow. In contrast, to execute the thrown strokes, a prerequisite is keeping the little finger on the bow.[14]

Flesch indicates that the tempo of the music will determine whether the springing stroke or thrown stroke should be used. When the tempo is too slow to use the springing stroke, then the thrown stroke becomes appropriate.[15] The principles for selecting the place in the bow at which to execute the springing stroke are applicable to the thrown stroke also. Although the springing stroke is basically executed in the middle part of

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[13]Flesch, The Art, 1:74.

[14]Flesch, The Art, 1:74.

[15]Flesch, The Art, 1:73.

the bow, the thrown stroke can be executed in any part of the bow.[16]

Galamian: Collé, Spiccato, and Sautillé

Galamian discusses three bow strokes which are lifted or bouncing. He calls them collé, spiccato, and sautillé.

Both collé and spiccato are lifted bow strokes, but the collé is very short, sharply accented, and produces a pizzicato-like sound. Galamian writes that in executing the collé, which is accomplished in the lower half of the bow, only the fingers are active.[17] For a broad collé, the arm also participates in the execution. A vertical motion of the fingers is used to set the bow pressure and pinch the string, and the horizontal motion sounds the note. Galamian views this stroke as very useful. He writes that it "combines the lightness and grace of the spiccato with the incisiveness of the martelé."[18]

Galamian's spiccato is similar to Flesch's thrown stroke. The characteristic of this stroke is that the bow is thrown down onto the strings for every single note and lifted up again after each one. The sign he uses for this stroke is a dot above or under the note. He agrees with

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[16]Flesch, The Art, 1:73 & 77.

[17]Galamian, 74.

[18]Galamian, 74.

Flesch that this kind of stroke can be played in any part of the bow; but he adds that it is used mainly in the lower two-thirds of the bow. He describes the execution in the following way:

> The main impulse for the action comes from the arm, but hand and fingers participate in a partly active, partly passive way with a combination of the vertical and the horizontal motions for the hand . . . and the vertical motion of the fingers . . ..[19]

Galamian indicates that the hand and fingers participate more when the speed becomes faster, and that the little finger is very active in balancing the bow.[20] The tone quality of the spiccato strokes varies, depending on how the strokes are executed. According to Galamian, if the bow is dropped from a higher point onto the string, the tone will be louder and generally sharper.[21]

According to Galamian, the sautillé is differentiated from the spiccato in that it requires no individual lifting and dropping of the bow for each note.[22] His sautillé is a bouncing bowing similar to Flesch's springing stroke. Like Auer and Flesch, Galamian also recommends practicing a small and fairly fast détaché near the middle of the bow to

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[19]Galamian, 76.

[20]Galamian, 76.

[21]Galamian, 75.

[22]Galamian, 77.

develop the sautillé technique.[23] He suggests that the bow stick be turned perpendicularly above the hair when the sautillé stroke is executed, as does Flesch.[24] Galamian writes about the execution:

> For the sautillé, the forearm is slightly more pronated than for the spiccato, and the balance point of the hand rests entirely on the index finger, with the second and third fingers only slightly touching the bow. The fourth finger, which is very active in spiccato in balancing the bow has no function at all in the sautillé and has to remain completely passive without any pressure on the stick.[25]

Galamian gives the following example, similar to Auer's (Ex. 6), for those who have difficulty making the sautillé jump sufficiently. The dots in the following example indicate the sautillé stroke.

Ex. 8: Galamian, 78.

In playing the above example, vertical movements of the hand and fingers will be involved in addition to horizontal movements. In contrast to Flesch's opinion that the springing strokes cannot be used at a slow tempo, Galamian

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[23]Galamian, 77.

[24]Galamian, 77.

[25]Galamian, 77.

believes that the sautillé stroke may be played at a quite slow tempo although the spiccato might be a more practical choice.[26]

Rolland: "Bouncing" Spiccato

Rolland views the spiccato as a "bouncing" instead of "lifted" or "thrown" bowing stroke. By using the word "bouncing" he may be implying that there should be less involvement of the hand and fingers in playing a spiccato bowing than Flesch and Galamian advise. He writes:

> Hold the bow lightly for the spiccato bowing. As long as the bouncing movement is continuous and regular, the bow can be lightly balanced without gripping.[27]

Compared with the "thrown" bowing of Flesch who states that "I throw the bow," and the spiccato bowing of Galamian who describes the bow movement as "thrown" and "lifted," the bow itself plays a more active role in Rolland's spiccato. His description of finger and hand movements is another suggestion of the difference between his spiccato and that of Flesch and Galamian. His fingers are relaxed on the stick and merely balance the bow without gripping, while Flesch believes that putting the little finger on the stick

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[26]Galamian, 77.

[27]Rolland, 136.

is a prerequisite and Galamian's fingers and hand participate in a rather active way.

Rolland plays the spiccato in the middle or near the frog of the bow. For spiccato strokes played near the frog, the entire arm swings like a pendulum; and for strokes played in the middle of the bow, the forearm moves from the elbow joint with very little upper-arm movement.

Rolland states that if the bow bounces fairly high from the string, it produces "crisp" spiccato sounds; if it is closer to the string, "round" spiccato sounds will be produced; if it is even closer, "flaky" (brushed) spiccato sounds will be produced.[28] In this respect, he agrees with Galamian.

Rolland views the sautillé as a bouncing stroke also. He does not clearly describe the difference between his spiccato and his sautillé. He only states: "In sautillé bowing, the player should not throw the bow intentionally but should let it bounce."[29] From this statement, it can be deduced that his spiccato is an off-the-string stroke and his sautillé is on-the-string. Rolland agrees with Auer, Flesch, and Galamian that the sautillé can be developed from the fast détaché:

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[28]Rolland, 137.

[29]Rolland, 172.

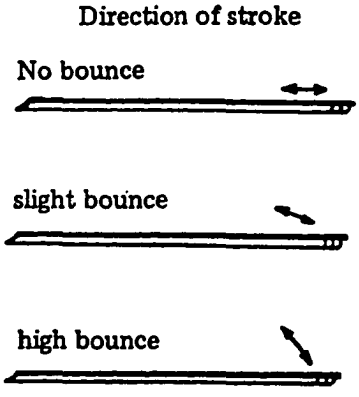
> Rapid détaché and sautillé are performed with practically the same movement. Therefore, it is advisable to develop the sautillé from the simpler détaché bowing.[30]

However, he uses an approach distinct from Galamian's to transform the rapid détaché into sautillé. While Galamian uses a pronation movement of the forearm, Rolland uses a supination:

> To induce bouncing, hold the bow with the fingers more nearly perpendicular to the stick (supinate) and move the bow in a more vertical direction (toward the floor).[31]

Rolland uses the following diagram to show the vertical movements of the bow or the hand:

Fig. 8: Rolland, 174.



The swinging motion of the elbow which Rolland uses for tone production, détaché, and martelé is also used in

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[30]Rolland, 174.

[31]Rolland, 174.

executing the sautillé. The counterclockwise rotary movement of the upper arm raises the elbow during a down bow and the clockwise movement lowers the elbow during an up bow.

According to Rolland, tempo determines the bouncing point of the bow. To play sixteenth notes at a tempo in which a quarter note equals 60 M.M., the bouncing point is just below the balance point; at 90 M.M., the bouncing point is a little above the balance point; at 152 M.M., it is at the middle of the bow.[32]

Summary

Table 6 presents the terms and markings used by pedagogues for the strokes discussed in this chapter, and exposes the characteristics and executions of these strokes.

"Spiccato" was a synonym of "staccato" in the musical usage of the eighteenth century, meaning "separated" or "detached." However, the eighteenth-century pedagogues did not use the term "spiccato" to denote lifted bow strokes. L'Abbé le fils did not discuss lifted bowing at all and the lack of such discussion might be a foreshadowing of the nineteenth-century emphasis on legato and "on-the-string" bouncing bowings.

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[32]Rolland, 172.

In the early nineteenth century, the spiccato stroke was not widely used. It was not even mentioned by Spohr in his Violin School. However, in France, bouncing bowings were explored by pedagogues such as Baillot who uses "light détaché," "perlé," and "spiccato" as terms.

In the early twentieth century, the term "spiccato" was interchangeable with the "sautillé." In the second half of the twentieth century, the two terms have been clearly separated, the "spiccato" being designated as a lifted bowing and the "sautillé" indicating a bouncing bowing.

In executing the modern spiccato, the bow is dropped from the air onto the string and lifted again after every note. The higher the drop is, the louder and sharper the tone will be. Flesch asserted that keeping the little finger on the bow stick was essential for the spiccato stroke. Galamian indicated that the action came mainly from the arm but that the hand and fingers participated also. Rolland recommended less involvement of the fingers and hand because he made a greater use of the bow's own bounce.

The twentieth-century pedagogues agreed that the sautillé could be developed from the quick and short détaché. However, they had different methods of effecting this development. Auer relaxed the pressure of the fingers on the bow; Flesch let the index finger rest loosely on the bow; Galamian pronated the forearm and let the third and

fourth fingers only touch the bow stick lightly; and in contrast to Galamian, Rolland supinated the hand.

In playing the sautillé, the movements of the hand and arm are similar to those used in the détaché; however, the hand, or the bow, moves somewhat vertically to produce the bouncing of the bow. The bouncing point of the bow varies with the tempo and dynamics of music and with the string(s) used. In this regard, Flesch gave a most detailed account.

Several signs are used for lifted bowings, bouncing bowings, spiccato, and sautillé. In the eighteenth century, a short vertical stroke was common to indicate a lifted bowing, though it was used for other bowings also. Baillot used wedges to indicate bouncing bowings. In the twentieth century, dots have been most commonly used. Sometimes there are no such signs in the music at all; and in these cases it is left to the player to determine what bowings styles are appropriate.

TABLE 6: SPICCATO

	Pre-Tourte Bow			Tourte Bow					
	The 18th Century			The 19th Century		The 20th Century			
	Geminiani	Mozart	L'Abbé le fils	Baillot	Spohr	Auer	Flesch	Galamian	Rolland
Term	Staccato.	No particular term.	No mention of this stroke.	1) Light détaché. 2)Perlé. 3) Spiccato.	No mention of this stroke.	Spiccato-sautillé.	1) Springing stroke. 2) Thrown stroke.	1) Collé 2) Spiccato. 3) Sautillé.	1) Spiccato. 2) Sautillé.
Marking	Vertical stroke.			1) No sign. 2,3) Wedge.			Dot.	Dot.	Dot.
Characteristic	Off string.	Off string.		1,2) On string; bouncing. 3) Off string; very detached.		On string.	1) On string. 2) Off string.	1) Off string; very short and sharply accented. 2) Off string. 3) On string.	1) Off string; more bouncing. 2) On string.
Execution	Used in medium tempo.			1,2) Played in middle third of bow. 3) Bow bounces in same place.		Relax pressure of fingers on bow; use wrist.	Tempo, strings, and dynamics determine what part of bow should be used; hold bow straight; tempo determines hand and arm movements.	1) Fingers active. 2) Action from arm. 3) Forearm pronated; little finger passive.	1) Let the bow bounce continuously; fingers balance the bow without gripping. 2) Hand supinated; vertical bow movement.

CHAPTER X

SLURRED STACCATO

"Staccato," like "spiccato," is a term which may cause confusion, because its meaning depends on when and how it is used. The term itself is an Italian word meaning "detached," and in general musical usage, it means that the notes are detached from each other. In eighteenth-century violin playing, it meant a kind of bowing which separated the notes, and was synonymous with "détaché" and "spiccato." In nineteenth- and twentieth-centuries violin playing, "staccato" refers not only to a detached bowing but also to a bowing which is for a series of detached notes played in a "martelé" style under one slur.

Short and separated bow strokes, referred to in the eighteenth century as staccato, have been discussed in Chapters VI and IX. In this chapter, the slurred-separated bowing of the eighteenth century, the bowings of the modern slurred staccato and the bowings similar to the modern slurred staccato will be discussed. These strokes might all be described as the slurred-separated bowings, in which two or more separated notes are played under a slur. The term "staccato" is used for these strokes in this chapter.

The Eighteenth Century

The eighteenth-century pedagogues offered examples of slurred-separated bowings in their treatises. However, they did not use the term "staccato" to describe such bowings, nor did they give detailed instruction as to execution. There were basically two kinds of slurred-separated bowings: on the string and off the string. In the former, the bow remained on the string and produced a kind of portato stroke; in the latter, the bow was lifted off the string and produced a sharper articulation.

Geminiani: A "Particolare" Stroke

The following example is from Geminiani's The Art of Playing on the Violin. The notation, using dot and slur, of this example is similar to that of the modern staccato:

Ex. 1: Geminiani, The Art, 27.

Geminiani does not give any instruction on how to play this example, only indicates that it is "particolare" (particular). It is unclear whether he lifts the bow in executing this particular bowing, and he does not give instruction on whether a down or up bow should be used after the double bar. This bowing must not have been used often

by Geminiani, because it appears only once in the twenty-four Examples and not at all in the twelve Compositions in his treatise.

Geminiani does not explain the difference between the notes marked with dots and the notes marked with vertical strokes. He only defines the vertical strokes as "staccato" (see Chapter IX). The vertical-stroke sign and dot sign sometimes meant the same thing in the eighteenth century; however, they could signify different strokes under certain circumstances. Boyden writes about eighteenth-century practice:

> Although dots under a slur sometimes mean the same thing as strokes under a slur, certain distinctions may be made between them, just as one may distinguish at times between individual notes with strokes and those with dots. The slurred staccato using dots is more common in andante or adagio, and is generally played on the string, resembling a portato. Slurred staccato using strokes is more closely identified with fast time, and is often played in "lifted" style.[1]

While Geminiani's example may or may not be similar to the portato, Mozart provides examples which show clearly the difference between the dot and vertical stroke.

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[1]Boyden, History, 416.

Mozart: On- and Off-the-String Strokes

The following is the first of two examples given by Mozart and marked with dots and slurs. It represents the kind of portato mentioned by Boyden:

Ex. 2: Mozart, 45.

Mozart explains the function of the dots:

> This [dot] signifies that the notes lying within the slur are not only to be played in one bow-stroke, but must be separated from each other by a slight pressure of the bow.[2]

Mozart uses alternating down and up bows, and states that the separation between the notes is made by bow pressure. The implication of the "slight pressure" is that he does not lift the bow from the strings. Considering the "give" quality of the bow he uses, this bowing is likely to be closer to the portato than to the modern staccato.

The second of Mozart's examples is marked with vertical strokes and slurs:

Ex. 3: Mozart, 45.

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[2]Mozart, 45.

Mozart states that if instead of dots, vertical strokes are written, the bow is to be lifted at each note. He writes about the above example:

> The first note of this example is taken in the down stroke but the remaining three in the up stroke, with a lift of the bow to each note, and detached from each other by a strong attack of the bow in the up stroke, and so on.[3]

Although Mozart's bow would produce a different sound, his lifted bowing resembles the modern flying staccato, and the sound is different from that of bowings marked with dots. In Mozart's treatise, most of the slurred notes with vertical strokes are played up bow. Even in the case where slurs follow one another without an intervening note, Mozart normally plays them with up bow instead of alternating down and up bows, as in the following example:

Ex. 4: Mozart, 110.

Nevertheless, Mozart provides in his treatise a single example, in which he does use alternating down and up bows:

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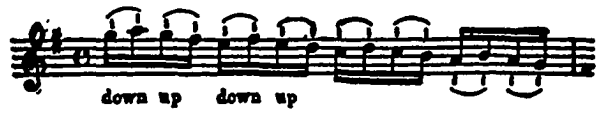
[3]Mozart, 45.

Ex. 5: Mozart, 118.



Mozart indicates that in this example, the bow is lifted regardless of whether a down bow or an up bow is used.[4]

L'Abbé le fils: Lifted and Articulated Strokes

L'Abbé le fils does not use the term "staccato." In his method book, there are two kinds of slurred-separated bowings. The first is indicated by vertical strokes, which are not over or under the notes but between them. The following example is from one of the minuets in his book:

Ex. 6: L'Abbé le fils, 10.

L'Abbé le fils' instruction for the above example is to lift the bow after the first note of the slurred-separated notes. He also notes that it is not important whether these two notes are played up or down bow.[5] In this example, all the slurred-separated notes are played down bow. This bowing is similar to that in the fourth of Mozart's examples (Ex. 5).

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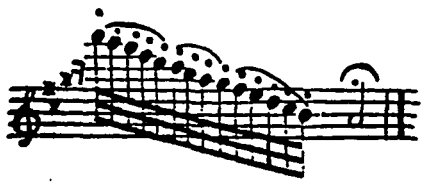
[4]Mozart, 118.

[5]L'Abbé le fils, 10.

The other slurred-separated bowing appears in numerous places in L'Abbé le fils' book. He uses slurs and dots to indicate the bowing. The following is an example:

Ex. 7: L'Abbé le fils, 54.



L'Abbé le fils writes about executing this bowing:

> . . . but whenever the notes of a run or other passages are slurred together, two and two, three and three, and so on, and one finds a dot on each of the notes, this manner of notation designates the articulated bowing; to do the bowing well, the wrist should be quite free, and should by itself articulate each of the notes perfectly evenly, whether with an up bow or down bow.[6]

L'Abbé le fils does not mention whether the bow is lifted, but makes it clear that the notes are articulated. He uses both up and down bows for this stroke. He does not discuss the mechanism of this bowing, except to mention that the wrist should be free. Neither Geminiani or Mozart discuss the mechanisms of their slurred-separated bowings.

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[6]The original text: ". . . mais lorsque les Notes d'une Roulade, ou de quelquautre trait sont liées toutes ensemble, de deux en deux, ou de trois en trois etc, et quil se trouve un Point sur chacune de ces Notes, cette derniere maniere de noter designe le Coup d'Archet Articulé; pour bien faire ce Coup d'Archet, le Poignet doit être trés libre, et doit seul articuler avec une paifaite égalité chacune de ces Notes, soit en les poussant, soit en les tirant. (L'Abbé le fils, 54.)

The nineteenth-century pedagogues offer more detailed accounts in this respect.

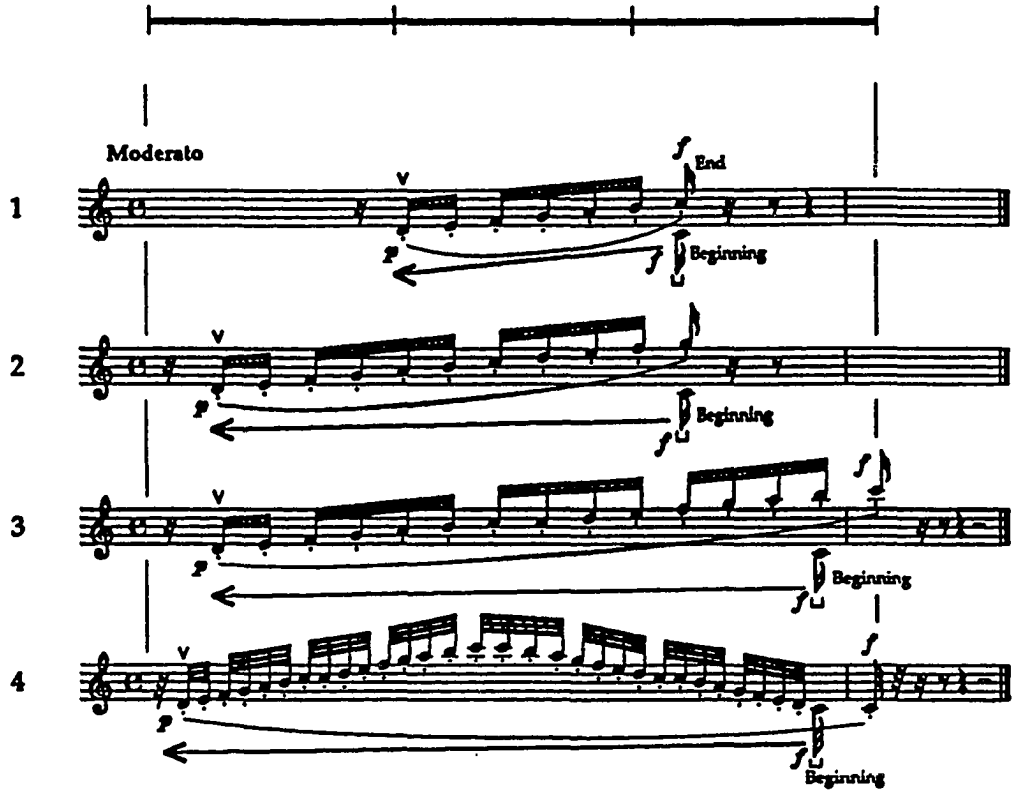
The Nineteenth Century

The nineteenth-century staccato possessed the essence of the modern staccato, being a series of martelé strokes. The pedagogues emphasized the on-the-string staccato; neither Baillot nor Spohr mentioned any off-the-string staccato strokes.

Baillot: "Natural" and "Acquired" Staccato

Baillot's staccato is a truly modern one. He uses both "staccato" and "articulated détaché" to name this bowing. Typically, in Baillot's staccato, the first note of a group of notes is played down bow, followed by the other notes played in one up bow which "bites" each note, like a series of fast, short martelé strokes. The bow stops on the string between the up-bow notes. The amount and part of the bow to be used depend on the number of notes under a slur. Baillot gives the following example to show this relationship:

Ex. 8: Baillot, The Art, 175.



The top line in the above example represents the divisions of the bow. The right end of the line is the frog of the bow and the left end, the tip. If there are not many notes to be played, the middle third of the bow is used. With more notes, the top third is added, and with even more notes, the whole bow will be used. While the up bow becomes longer and longer, the down bow also becomes longer. In line 4 of the above example, the initial note uses the entire length of the bow, creating an extremely long and fast down bow.

Baillot endorses not only the up-bow staccato but also the more difficult down-bow staccato. He indicates that to practice this stroke in both directions is useful in obtaining flexibility of execution.

According to Baillot, there are two ways to execute the staccato. The first is a "natural" one, available to those who have a natural aptitude for a very fast staccato. In this case, the repeated attack of the bow on the string is made by means of a stiff movement, a sort of shuddering, of the wrist and arm. Baillot states that the rhythm cannot be well controlled in this execution.[7]

The second way is "acquired" instead of natural. Baillot writes:

> The staccato that can be acquired through practice is a combination of biting and softness; it is a light, repeated attack on the string made by a movement of the wrist, followed by letting the bow carry through by itself. During the little stop that is made on the string at each note, the bow is less supported by the thumb.[8]

In the "acquired" execution, the wrist plays an important role. It cannot be stiff, or it will not be able to make the movement mentioned by Baillot. The thumb changes its supporting pressure during the stroke. It provides more pressure during the attack and less during the stop.

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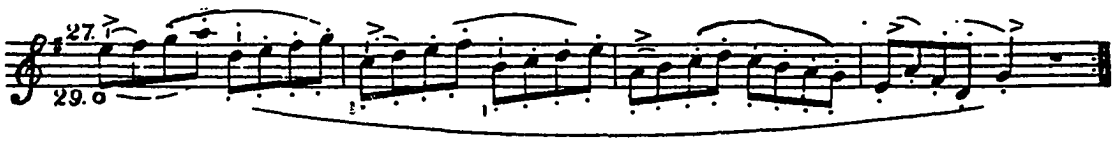
[7]Baillot, The Art, 176.

[8]Baillot, The Art, 176.

Spohr: Half-Bow Staccato

Spohr uses slurs and dots to mark the staccato, as does Baillot. While Baillot may use the whole bow to play this stroke, Spohr limits its use to the upper half of the bow regardless of how many notes are under a slur. The following is one of the numerous examples of the staccato bowing in Spohr's Violin School:

Ex. 9: Spohr, Violin School, 121.



For Nos. 27 and 29 above, Spohr's instruction is that half of the bow should be used, even though the number of notes under a slur in the two cases are different.[9] For clarity of sound, as little bow as necessary should be used. Spohr writes about the execution:

> The pushing on of the bow is effected solely by the wrist, the fore and back-arm being kept steady. For each note, the first finger of the right hand is sufficiently pressed on the bow-stick, to lay the whole width of the hair on the string; and for the detaching of the notes, the bow rises a little each time after it has been pushed forward, but not so much as to remove the edge of the hair from the string.[10]

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[9]Spohr, Violin School, 121.

[10]Spohr, Violin School, 121.

Similarly to Baillot, Spohr uses the wrist as the main agent of the staccato. The index finger of the right hand provides the needed pressure on the bow. Spohr releases the bow pressure after each note, allowing the bow, as he states, to "rise a little." Nonetheless, the bow evidently remains on the string. Spohr's staccato has sharp articulations, as he claims that "The beauty of the staccato consists chiefly in an equal, clear, and smart detaching of the notes in the strictest time."[11]

Spohr discusses down-bow staccato and gives the following example:

Ex. 10: Spohr, Violin School, 123.

Although Spohr uses down-bow staccato, he believes that it is more difficult than the up-bow version, and is not suitable for a passage in a fast tempo.[12] However, he also asserts that the down-bow staccato can produce good effect in melodious passages with a "gentle detaching of the notes."[13] This down-bow staccato with "gentle detaching"

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[11]Spohr, Violin School, 121.

[12]Spohr, Violin School, 123.

[13]Spohr, Violin School, 123.

definitely has no "biting" quality and is similar to the portato.

The Twentieth Century

The twentieth-century pedagogues used not only on-the-string staccato strokes, but also off-the-string ones. While they gave diverse terms for the on-the-string staccato, all but Rolland called the off-the-string staccato "flying staccato." The universal marking for both types of the staccato is dot and slur.

Auer: Firm Staccato and Flying Staccato

Auer discusses two kinds of staccato, and calls the first one "firm staccato." He offers a brief survey of its execution and maintains that this stroke can be produced by the wrist, the forearm, or the upper arm. According to Auer, his teacher Joachim produced the staccato only from the wrist, with a moderate speed; Vieuxtemps played his staccato in a mixed manner, using both wrist and forearm; and Wieniawski used the upper arm only, stiffening the wrist to a point of actual inflexibility and producing the fastest staccato.[14] Auer comments on Wieniawski's staccato:

> His staccati were dizzyingly rapid and at the same time possessed a mechanical equality. This method of

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[14]Auer, 71-72.

> production I myself have discovered to be the most efficacious. I use it.[15]

The Joachim type of staccato is similar to Spohr's staccato and to the "acquired" staccato of Baillot, being executed by the wrist. The Wieniawski type is similar to the "natural" staccato mentioned by Baillot, and is produced by a stiffened arm.

The second kind of staccato Auer discusses is the flying staccato. This stroke uses a combination of movements of the upper arm and the wrist:

> The Staccato volant ("Flying Staccato") is a combination of the two methods--playing from the upper arm, as well as from the wrist, using both at the same time, . . .[16]

According to Auer, the difference between the firm staccato and flying staccato is that in the former the bow remains on the string, and in the latter the bow is lifted in an elastic manner after each note.

Flesch: Four Kinds of Staccato

Flesch discusses four kinds of staccato. His terms are "martelé-staccato" which he also simply called "staccato," "stiff staccato," "flying staccato," and "standing staccato."

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[15]Auer, 72.

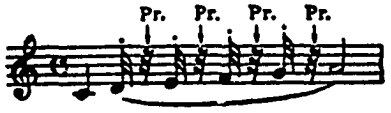
[16]Auer, 72-73.

Flesch's martelé-staccato is a series of martelé strokes played in one bow direction. According to Flesch, this bowing is developed for playing passages which are too fast for the martelé strokes.[17] Its execution is a succession of alternating pressure and release of pressure on the bow. Flesch uses the following figure to show how the pressure is exerted:

Fig. 9: Flesch, The Art, 1:69.

The dots in the above figure indicate the notes and "Pr" means pressure. The pressure is exerted during a pause which Flesch calls the "pressure pause." The following example shows the relationship between the pressure and the notes:

Ex. 11: Flesch, The Art, 1:70.



Flesch advises that to gain the technique of the staccato one should play this stroke slowly at first, then more rapidly when agility is increased.[18] If one fails to

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[17]Flesch, The Art, 1:69.

[18]Flesch, The Art, 1:70.

succeed in mastering this stroke, Flesch recommends another kind of staccato which he calls the stiff staccato, similar to the Wieniawski type mentioned by Auer. Flesch describes the execution:

> With total stiffening of the upper arm, and accompanying convulsive contraction of all the participating groups of muscles, the violinist at times may be able to make the whole arm carry out an extraordinarily rapid and equalized trembling, in conjunction with a forward movement of the lower arm, whereby an extremely rapid, contracted and well-sounding staccato is produced.[19]

Flesch believes that by using the method described above, students who could not learn the martelé-staccato technique after years of effort may achieve it overnight.[20]

Another choice Flesch recommends for those students is the flying staccato. He defines it:

> The Flying Staccato practically represents a combination of the martelé staccato with the "thrown" or "springing" staccato bowing, inasmuch as a number of short notes are produced by a single bow-stroke, while the bow leaves the string after each note.[21]

Flesch indicates that this bowing is used almost exclusively in the middle of the bow. In its execution, the

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[19]Flesch, The Art, 1:71

[20]Flesch, The Art, 1:71.

[21]Flesch, The Art, 1:77.

raising and dropping bow movements take the place of the pressure movements in the martelé-staccato.

Flesch also discusses the standing staccato, which is developed from the flying staccato, or may be viewed as a variant of it. This bowing is used for a large number of notes under a slur. The difference between the flying staccato and standing staccato is that there is no expenditure of bow in the execution of the standing staccato. The standing staccato, Flesch writes, is executed "by the wrist, in such a way that arm or hand return tonelessly to the point of departure after each note."[22] According to Flesch, this stroke can be used in any part of the bow and the effect is especially charming when the stroke is played at the frog.[23]

Galamian: Solid, Tense, and Flying Staccatos

Galamian discusses three kinds of staccato bowings: the solid staccato, tense staccato, and flying staccato. His solid staccato, which he also simply terms as "staccato," is equivalent to Flesch's martelé-staccato. Galamian writes about this stroke:

> This bowing, most often used as the "solid staccato" in contrast to the "flying staccato," is a

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[22]Flesch, The Art, 1:78.

[23]Flesch, The Art, 1:78.

> succession of short, clearly separated, and consonant-articulated strokes on one bow, performed while the hair of the bow remains in permanent contact with the string. It is practiced most of the time as a series of small, successive martelé strokes that follow one another in the same direction of the bow, either up or down. The bow is set firmly for each stroke, and the pressure is released after the accent has sounded on each note.[24]

Galamian views the solid staccato as a very personal type of bowing, because it can be done in many different ways. His advice is that if a student plays the stroke well, the teacher should leave him alone even if he plays it in an unusual way.[25]

According to Galamian, because of the exertion and release of pressure to produce the martelé effect in staccato bowing, the stroke is limited to a certain speed.[26] If the tempo is fast, the staccato can be produced by muscular oscillations in the arm, hand, and/or fingers brought about by tension. Galamian calls this staccato "tense staccato," an equivalent of Auer's Wieniawski-type staccato and Flesch's stiff staccato.

Galamian's instruction is that for the tense staccato, the bow should not form a right angle with the strings but

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[24]Galamian, 78.

[25]Galamian, 78.

[26]Galamian, 78.

should be slightly slanted.[27] That is, on an up bow, the tip of the bow moves towards the fingerboard and the frog is closer to the body than normal. He also states that it will help greatly if the elbow is raised, the forearm slightly pronated, and the bow tilted toward the fingerboard for an up-bow tense staccato.[28] For the down-bow staccato, Galamian advocates the opposite adjustments: the frog moves slightly away from the body during the down bow and the bow stick tilts toward the bridge instead of the fingerboard. The wrist and elbow are lowered and the forearm is completely pronated.[29] An important difference between the solid staccato and the tense staccato is that there is no release of pressure between notes in the tense staccato bowing.

The flying staccato is derived from the solid staccato. It is performed in a manner similar to the solid staccato, but the pressure is lightened and the bow comes off the string after each note. Galamian writes about its execution:

> To practice the flying staccato it is best to start with a firm up-bow staccato; then, after this motion is well under way, lighten the hand by lifting the elbow and wrist, and add a small amount of vertical

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[27]Galamian, 78-79.

[28]Galamian, 79.

[29]Galamian, 79.

> finger motion, which will help the bow bounce off the strings after each note.[30]

This bowing, according to Galamian, is customarily done on the up bow.[31] Because it is derived from the solid staccato, and because there are various ways to produce the solid staccato, the execution of the flying staccato will vary according to different individual styles of staccato playing.

Rolland: Martelé-staccato and Group Staccato

Rolland discusses the martelé-staccato in The Teaching of Action in String Playing. He uses slurs and dots to mark this bowing, as do the other twentieth-century pedagogues. His defines the martelé-staccato as a bowing in which "two or more martelé strokes are played on the same bow."[32] Since this bow stroke is a kind of martelé, the principles of playing the martelé are applicable to it. About its execution, Rolland writes:

> Each note must be short and clear. Each note starts with a little explosion of sound. Stop the bow suddenly to permit a rest between each sound and preparation of the next stroke.[33]

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[30]Galamian, 80.

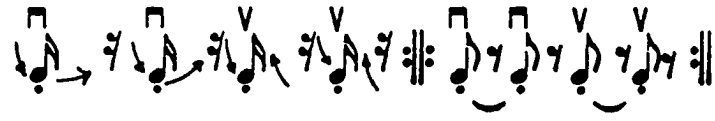
[31]Galamian, 79.

[32]Rolland, 142.

[33]Rolland, 144.

In the execution of the martelé-staccato, the exertion and release of pressure are involved. Rolland uses the following example to show the process of adding and releasing the pressure. This example is similar to the one he uses for the martelé stroke (see Ex. 6, Chapter VIII):

Ex. 12: Rolland, 142.



In the above example, the downward arrow indicates the exertion of pressure and the upward arrow denotes its release. The stroke finishes with a slight upward curve movement of the hand.

In addition to the martelé-staccato, Rolland discusses the group staccato, also called the slurred staccato. However, he does not clearly differentiate the terms and his group staccato seems to be the same as the martelé-staccato. From the examples he uses, it can be seen that the difference is that there are more than two notes under a slur in group staccato, while martelé-staccato has only two notes per slur. He advises students to practice the group staccato in any part of the bow.[34] Rolland does not discuss other staccatos such as the flying staccato.

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[34]Rolland, 143.

SUMMARY

The general meaning of the term "staccato" is "detached" or "separated." In eighteenth-century violin playing, it denotes bowings which separated the notes and could be played with alternating down and up bows as discussed in Chapters VI and IX. The eighteenth-century pedagogues did not use this term for the slurred-separated bowings as discussed in this chapter. In the nineteenth and twentieth centuries it indicates bowings in which separated notes are played in one bow direction. Table 7 contains information on slurred-separated bow strokes, including term, marking, characteristic, and execution.

The staccato, that is, the slurred-separated bowing, is generally notated with dots under a slur. In the eighteenth century, violinists also used vertical strokes instead of dots. The strokes were usually above or below the notes, but sometimes they could be written between the notes, as in L'Abbé le fils' example.

The staccato strokes can be divided into two categories: on the string and off the string. The slurred-separated bowings of the eighteenth century, especially those notated with strokes, belong to the second category. Those marked with dots are of the first category and are probably in a portato style. The first category also includes the staccato bowing of Baillot and Spohr, Auer's

firm staccato, Flesch's martelé-staccato and stiff staccato, Galamian's solid staccato and tense staccato, and Rolland's martelé-staccato. The second category includes the flying staccato of Auer, Flesch, and Galamian; and Flesch's standing staccato.

The execution of the staccato can also be divided into two categories. In the first category, the stroke is executed with movements of the hand and arm. This execution involves either exerting and releasing pressure on the bow or lifting and dropping the bow. In the second category, the staccato is executed with the tension in the arm and hand. Pressure is kept on the bow and not released during the stroke. Generally, in violin playing, tension in the arm and hand is considered taboo and should be avoided, but the staccato offers an exception. The staccato executed by tension is faster than other variety, and the use of tension might be a solution for those who otherwise are unable to achieve the staccato.

Among the eighteenth-century pedagogues, Mozart and Geminiani provided no information on the mechanics of the staccato. Only L'Abbé le fils mentioned that the wrist should be free. His statement places his staccato in the first category of execution style. This category also includes Baillot's "acquired" staccato, Spohr's staccato, Auer's Joachim-type and Vieuxtemps-type staccatos, Flesch's

martelé-staccato and flying staccato, Galamian's solid staccato and flying staccato, and Rolland's martelé-staccato. The second category contains Baillot's "natural" staccato, Auer's Wieniawski-type staccato, Flesch's stiff staccato, and Galamian's tense staccato.

The staccato bowing can be played either up bow or down bow. The down-bow staccato bowings, even those played off the string, may not have been as inconvenient for eighteenth-century violinists as for modern players. However, the down-bow staccato strokes, especially those played off the string, generate difficulty for violinists who use the Tourte bow. This fact is reflected in the writings of Spohr and Galamian.

The staccato is a very personal bowing, as stated by Galamian and reflected in historical practice. There are various ways to execute the staccato bowings, and it is the task of a teacher to find the most suitable way for a particular student to achieve this attractive and virtuosic technique.

TABLE 7: STACCATO

	Pre-Tourte Bow			Tourte Bow					
	The 18th Century			The 19th Century		The 20th Century			
	Geminiani	Mozart	L'Abbé le fils	Baillot	Spohr	Auer	Flesch	Galamian	Rolland
Term				Staccato or articulated détaché.	Staccato.	1) Firm staccato. 2) Flying staccato.	1) Staccato. 2) Stiff staccato. 3) Flying staccato. 4) Standing staccato.	1) Solid staccato. 2) Tense staccato. 3) Flying staccato.	1) Martelé-staccato. 2) Group staccato.
Marking	Dot and slur.	1) Dot and slur. 2) Vertical stroke and slur.	1) Slur and vertical stroke between notes. 2) Dot and slur.	Dot and slur.	Dot and slur.	Dot and slur.	Dot and slur.	Dot and slur.	Dot and slur.
Characteristic		1) On string; like portato. 2) Off string.	1) Off string. 2) Articulated.	On string; bite; martelé-like.	On string; "smart" detached.	1) On string; fast. 2) Off string.	1) On string; a series of martelé strokes. 2) On string; fast. 3,4) Off string.	1,2) On string; martelé-like. 3) Off string.	On string; martelé-like.
Execution		1) Slight bow pressure for separation; both up and down bows. 2) Lift bow at each note; strong attack; up bow.	1) Lift bow off string. 2) Wrist free; articulate notes evenly. 1&2) Both up and down bows.	1) "Natural" way: stiff wrist and arm. 2) "Acquired" way: use wrist; thumb changes pressure. Number of notes determines length of bow to be used.	Played in upper half of bow; use wrist; index finger presses on bow.	1) Use upper arm; stiff wrist. 2) Use combined movement of upper arm and wrist.	1) Exert pressure during "pressure pause." 2) Stiff upper arm. 3) Played in middle of bow. 4) Use wrist; can be played in any part of bow.	1) Can be played in many ways. 2) Muscular oscillations; bow slanted. 3) Usually played up bow; in same manner of solid staccato but bow is lifted.	Principles of playing martelé are applicable.

CHAPTER XI

CONCLUSION

This writer has examined and compared the basic violin bowing techniques of nine pedagogues who represent different periods. The summaries of Chapters IV to X and the seven comparative tables encapsulate these pedagogues' differences and similarities of approach. Can these various approaches offer some insights into the process of teaching bowing technique? Surely they can; and to set forth all of these insights would require another dissertation. This concluding chapter is intended merely to suggest two ways in which the information in this dissertation could be applied to the teaching process.

One area of interest involves the flexibility evident in some aspects of bowing technique versus certain other principles which appear to be universal. An awareness of these different conditions may affect the teacher's attitude regarding the individuality of the student. For example, the manner of holding the bow varies as seen in the German, Franco-Belgian, and Russian bow holds, in which the index finger contacts the bow at various places; and also in Auer's examples of Joachim, Ysaye, and Sarasate, who place their fingers on the bow differently. These different

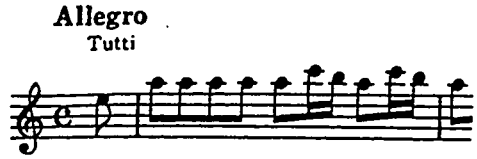
manners of bow hold suggest that there is flexibility in teaching how to hold the bow. Auer's statement, especially, can encourage a teacher to choose a bow hold most suitable for the hand condition of an individual student.

On the other hand, regarding the principles of tone production, all of the cited pedagogues are in agreement. The rules of bow speed, bow pressure, sounding point, and straight bow movement parallel to the bridge are basically the same in their methods. It may be inferred that these rules are universal and unchangeable; they have not altered even when the violin and the bow themselves have changed. It is probably unwise, then, for a teacher to abandon or ignore these principles.

With the increasing interest in early music in recent decades, information about early techniques is certainly in demand. This study provides discussions on eighteenth-century bowing technique, which are useful for violinists interested in music of that period. However, the methods of the eighteenth-century pedagogues are suitable to the equipment they used, and not every modern violinist has access to eighteenth-century instruments. This raises a question: how can eighteenth-century technique be transferred to the modern violin and bow? It must be stated that a modern violin and bow cannot produce exactly the sound produced by an eighteenth-century violin and bow.

However, a well-informed modern violinist can simulate an eighteenth-century performing style using modern equipment.

Consider the following example, from Vivaldi's Violin Concerto in A Minor:



What stroke is suitable for the eighth-note A's? Certainly, it will not be a modern détaché, which is a legato and connected stroke, because the typical non-slurred stroke in the eighteenth century is a separated stroke. Thus, separated bow strokes must be used. But, this is not enough. The eighteenth-century bow produces an articulation different from that of the modern bow. Because of its "give" characteristic, the eighteenth-century bow produces a softer articulation than the modern bow. To accommodate this difference, the modern violinist may lessen the bow pressure at the beginning of each stroke. Even if the violinist takes great care, in this way, to control the stroke length and articulation, the modern player cannot perfectly reproduce the eighteenth-century sound. Still, to a significant degree, the eighteenth-century esthetics can be suggested. A comprehension of the techniques used in different periods will help a modern violinist to understand the performing styles of these periods, and to perform in an historically informed fashion.

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