# String Praxis

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**String Praxis**

String Praxis publishes scholarly papers on the pedagogy and performance of bowed string instruments twice a year. Research and discussion topics include the teaching and learning of string performance, the history and methodology of string pedagogy, scholarly discussion of teaching materials and methods, conceptual foundations of pedagogy and performance and the performance practice and performance culture relevant to string instruments.



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Submitted papers will be sent to two readers for blind review. Authors may request copies of readers' reports. Readers shall remain anonymous. The decision of the editors is final and not subject to appeal.

# *Content*

Volume 1 No 1, September 2011

# *Editorial*

String pedagogy is a complex discipline where practical knowledge and experience tend to be highly visible while systematic gathering of knowledge and critical exposition of research remain exceptions. For anyone working within Universities or Conservatories this circumstance presents a challenge. The more immediate success of the experienced practitioner competes with the often unspectacular and laborious achievements of the theoretical researchers. The former may indeed consider theorizing largely a waste of time, concentrating instead on the immediate needs of teaching and learning and refusing any challenges to successful methodology or practice.

Practical success may justify first person knowledge and experience to a point. To be sure, teaching and practice cannot proceed by theoretical insight alone. Remaining within practical confines, however, leaves the question unexplored whether more benefit for all could be achieved by broadening a body of knowledge through theoretical engagement. Other disciplines have advanced further here: Medicine knows that medical research will benefit the general practitioner. Theoretical or foundational research enhances the relevance and skills of the practitioner. At no time though, is one discarded for the other. Like the human capacity for action and reflection, they must be kept in balance.

All practice will benefit from a critical, theoretical and systematic reflection of its experience and success. While diagnostic ability and an intuition for effective treatment or therapy will always be the domain of the practitioner her practice can be transformed through a pure pursuit of knowledge.

We have decided to offer *String Praxis* to the community of musicians, educators and scholars, particularly those working in Higher Education. This journal offers the opportunity for the publication of academically qualified knowledge, for the critical discussion of theory and for the comprehensive reflection on performance and pedagogical practices. Contributions are peer-reviewed in accordance with the standards of scholarly journals in other disciplines. We hope that over time *String Praxis* will enhance a culture of knowledge and critical dialogue to inform the work of practitioners and scholars alike.

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# *The Use of Etudes in the Early Development of Position Playing on the Violin*

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The idea of playing in different positions on the violin has been in circulation for the last 400 years. In its present shape the fingerboard has approximately twenty five diminishing semitones per string, while the ability to move around the fingerboard remains one of the fundamental techniques in left hand virtuosity. Technical foundations that allow violinists the freedom and ease of shifting need to be systematically developed from the early stages of violin instruction.

The term 'position' is used to describe the area of the fingerboard where the 1st finger on any string corresponds to a particular interval from the open string (i.e. second – 1st position, third – 2nd position, fourth – 3rd position etc.). However, this division is quite approximate as minor, major or augmented interval may still represent the same position.

The knowledge – and introduction of *positions* represents a large and significant challenge in violin pedagogy. When speaking of positions Leopold Auer writes: "Since playing in one position only is so elemental a matter as scarcely to justify the use of the word 'technique' in its more comprehensive sense, a consideration of left-hand technique would of necessity begin with the change of positions"[1].

The earliest description of different positions in literature is found in relation to the viol and is described in Sylvestro di Ganassi's *Regola Rubertina* (1542-43)[2]. Playing in different positions however developed slowly on the violin. Almost a century later Marin Mersenne comments in his *Harmonie Universelle* (1636-7) that "the best players reach an octave above the open strings [...] on all strings"[3] indicating that violinists were only accustomed to the use of the first three or four positions on all strings. The use of "all strings" is an important point, since the use of higher positions on the E string developed earlier than on the other strings. During the first half of the eighteenth century the range of the violin extended. Treatises by Leopold Mozart and Francesco Geminiani incorporate the use of seven positions[4], however, there are instances in virtuoso music (e.g. Locatelli's *L'Arte del violino*) where the range is extended to the fourteenth position.

A change of position is the technical matter of transporting the hand to any place on the fingerboard. In addition, it is an expressive technique providing a musical effect (*portamento, glissando*). Coordination between the vertical motion (lifting and placing fingers) and the horizontal motion (movement of the hand along the

[1] Leopold Auer, *Violin Playing as I Teach It* (New York: Frederick A. Stokes, 1921). 85
[2] David D. Boyden, *The History of Violin Playing, from Its Origins to 1761 and Its Relationship to the Violin and Violin Music* (London, New York: Oxford University Press, 1990; reprint, 2002). 86
[3] Ibid. 154
[4] Ibid. 338

Sorkin, Evgeny. The use of etudes in the early development of position playing on the violin, *String Praxis, Volume 1, No. 1, September 2011*, 1- 10. © www.stringpraxis.com

fingerboard) forms the basis of shifting. Carl Flesch wrote that changing positions "forms the most difficult problem of left hand technique"[5]

During the early development of the young violinist various methods have been used to determine the timing when different positions and changes of position can be introduced. The common practice recommends introducing different positions after the left hand has been established in first position. This method means that a young violinist is only exposed to the positions after playing in first position for quite some time. Barinskaya recommends that "preliminary exercises for changes of positions can be introduced in the beginning of the second year of violin study"[6]. Such a late introduction of shifting, however, can lead to excessive pressure on the neck of the violin, difficulty in the smooth mobility of the arm and the application of fingerings from the new position to the notes already learned in the first position. Other methods (i.e. Géza Szilvay's *Colourstrings*, Yova Yordanova *Primer*) suggest moving the hand (to harmonics or third position) as a preliminary exercise to shifting at a much earlier stage. For example, in Yordanova's "*Primer for little violinists"*[7], the second and third fingers are introduced in first and then third positions before the first finger is introduced. This approach has more benefits in freeing up the 'neck grip', however it does create other potential issues, primarily with hand shape (leaning against the side of the violin). In *Colourstrings*[8], the notes are introduced as harmonics, which solves the problem of intonation temporarily, but slows down the development of dropping and lifting finger action.

Either approach to timing the introduction of positions has its own benefits and challenges and is usually chosen at the discretion of the teacher. However, both approaches have many similarities. In the first instance, the position itself has to be established. Then the action of the arm has to be taught, and finally different types of shifts can be discussed. For the introduction of positions, the teacher places the hand of the student in second or third position and the student becomes acquainted with this position.

There are a number of studies and short pieces in one position ranging from the very basic (i.e. 4-8 bars long) to more advanced that include more complex rhythms and bowings. When selecting appropriate etudes, the teacher might like to consider the complexity of rhythm, bowing and the length of the etude. I have observed that it will be easier for a student to sight- read a study or piece in a new position, if it has more scale-like passages with consecutive notes (Ex. 1), rather than wider intervals. In addition, a teacher may change the fingering of an already learned etude, so that it is played with different fingerings in a different position.

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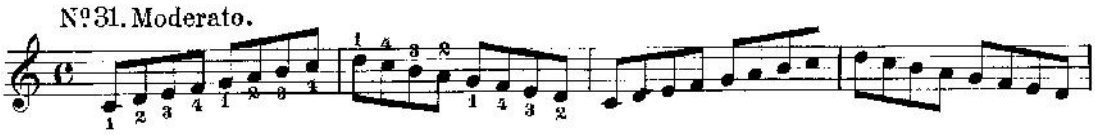
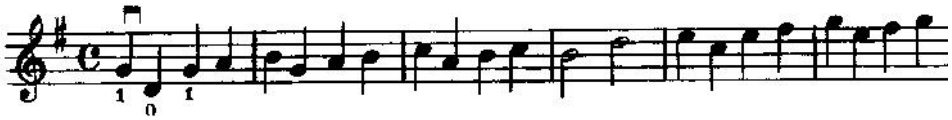
[5] Carl Flesch, *Violin Fingering : Its Theory and Practice*, trans. Boris Schwarz ; foreword by Yehudi Menuhin (London: Barrie & Rockliff, 1966). 51
[6] Anna Barinskaya, *Early Violin Instruction*, trans. Evgeny Sorkin (Moscow: Muzyka, 2007). 48
[7] Yova Yordanova, *Primer for Little Violinists* (Moscow: Muzyka, 2009).
[8] Géza Szilvay, *Violin Abc* Colourstrings (Helsinki: Fennica Gehrmann, 2009).

Ex. 1 F. Wohlfahrt Opus 45 No. 31




This etude has the benefit of a simple rhythm (all quavers) and a simple key (C major). It is also filled with scale-like passages that are readily recognizable by students. After studying Wohlfahrt Opus 45 No. 31, the teacher might like to consider etudes with notes that are separated by wider intervals. (Ex. 2)

Ex. 2 A. Komarovsky Opus 2 No. 16



This etude is also simple, composed with straightforward rhythms (Crotchets and minims) and in the easy key of G major. Although, shorter than Wohlfahrt Opus 45 No. 31, this etude will in reality be more complex for a young violinist as it features intervals such as thirds, fourths and octaves.

Once the work within the same position using scales, studies and pieces has resulted in some progress, a teacher can introduce shifting and moving into a particular position.

## *Types of Shifts*

There are many ways of changing positions. Carl Flesch divides changes of positions into "*technical* and *emotional* gliding."[9] He refers to the former as *glissando* and to the latter as *portamento*. Flesch describes the following types of silent shifts:

1) Creeping into positions "is produced by having the finger alone move into a new position first, and by having the arm follow later"[10];

2) The open string "is an old device for making a change of position inaudible"[11].

In further discussions of shifts Flesch states, that a "change from one position to another is in reality invariably carried out by the self-same finger"[12]. Flesch is also the inventor of the terms *B-portamento* and *L-portamento* used to describe slides involving two fingers. *B-portamento* refers to a slide executed by the finger playing the note *before* the shift or the *beginning* note. An *L-portamento*[13] is a slide on a

[9] Carl Flesch, *The Art of Violin Playing* (New York: Carl Fischer, 1939). 28
[10] Flesch, *Violin Fingering : Its Theory and Practice*. 96
[11] Ibid., 118
[12] ———, *The Art of Violin Playing*. 28
[13] In some editions *E-portamento* (for End note)

finger playing a note after the shift or the last note. He further describes portamenti as:

1) "From the lower to the higher-lying finger;
2) With the same finger;
3) From the higher to the lower lying finger;"[14]
4) "'*fantasy portamento'* representing a combination of the *B- and L-portamento.*"[15]

Ivan Galamian describes three fundamental types of shifts:

1) "The same finger plays the note preceding and the note following the shift;
2) The shift (sliding motion) is performed by the finger that is on the string when the shift starts, but a new finger plays the arrival note[16].
3) The shift is performed by the finger that will play the arrival note[17]"[18]

Galamian also describes other types of shifts such as the "*retarded shift*" as follows: "The finger is first stretched to a new note outside the position in which the hand is resting at the moment and after the stretched finger is placed on the string, the hand follows thereafter into the new position"[19]. The *combination shift* starts its slide with one finger (*as in the B portamento*) and finishes with another finger (as in the *L portamento*).

Yankelevich describes four types of shifts:

(1) The same finger slide; [...]
(2) The slide from a lower finger to the higher finger when shifting up (and opposite when shifting down); [...]
(3) The slide on the arriving finger [...and]
(4) The slide from a higher finger to the lower finger when shifting up (and opposite when shifting down)[20].

Yankelevich also mentions that there are other types of shifts including open string shifts, shifts using stretching or contracting fingers and shifts using harmonics and glissandi.

Fortunatov[21] and Garlitski[22] refer to four types of shifts, namely

(1) The open string shift;

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[14] Flesch, *The Art of Violin Playing*. 31
[15] Ibid., 34
[16] This is essentially identical to Flesch's B-portamento
[17] This is essentially identical to Flesch's L-portamento
[18] Ivan Galamian, *Principles of Violin Playing & Teaching*, third ed. (Ann Arbour (Michigan): Shar Products Company, 1985). 25
[19] Ibid. 25
20 Yuri Yankelevich, Pedagogic Legacy (Moscow: Postscriptum, 1993). 76
21 Konstantin Fortunatov, ed. Selected Studies, vol. 2 (Moscow: Muzyka,2009). Translated by E. Sorkin
[22] M Garlitski, *Step by Step: Primer for Young Violinists* (Moscow: Soviet Composer, 1977). Translated by E.Sorkin

(2) The same finger shift;
(3) A shift from a lower finger to a higher finger (when sliding up and reverse when sliding down);
(4) A shift from a higher finger to a lower finger (when sliding up and reverse when sliding down) or the *substitution shift*.

For greater ease of discussing shifts a summary of the various classifications can be given as follows:

| In this paper: | Flesch | Galamian | Yankelevich | Fortunatov/ Garlitski |
|---|---|---|---|---|
| Same-finger slide | Same finger portamento | Type 1 | Type 1 | Type 2 |
| B-Slide | *B-portamento* | Type 2 | Type 2 | Type 3 |
| L-Slide | *L-portamento* | Type 3 | Type 3 | Type 3 |
| Combination Slide | *Fantasy portamento* | Combination Slide | Not specified | Not specified |
| Substitution Shift | Not specified | Not specified | Type 4 | Type 4 |
| Retarded Shift | Creeping into positions | Retarded shift | Not specified | Not specified |
| Shift through open string | Open string | Not specified | Not specified | Type 1 |

In violin instruction, a *shift through an open string* is often explained before other types as it resembles preliminary exercises for shifting (i.e. memorizing the feel of positions[23]) and is therefore more familiar to the young violinist.

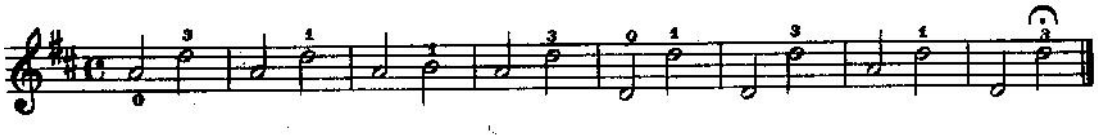
In this shift special attention should be given to the coordination of the shift with the bow change. The shift to a different position should take place in the middle of playing the open string to avoid unnecessary accents. Furthermore and given the relative simplicity of this shift, there is more opportunity to pay attention to the basics of shifting, in particular:

(1) The role of the elbow, which will move down when shifting from first to third position;
(2) The role of the thumb, which slides with the rest of the hand. The placement of the thumb is discussed at length by Galamian[24] and Flesch[25]. However, extra care needs to be taken by the teacher to discuss with the student role of the thumb during shifting.
(3) The shape of the hand, which should remain the same in first, second and third positions. Making sure that the wrist remains relaxed and in a correct shape[26].

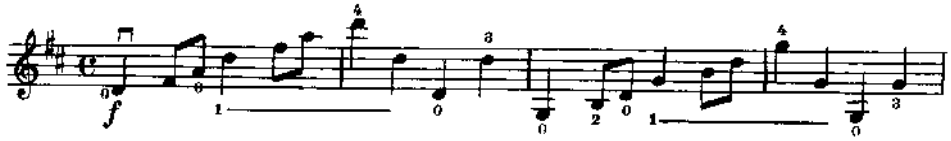
[23] Simon Fischer, *Practice : 250 Step-by-Step Practice Methods for the Violin* (London: Edition Peters, 2004). 155
[24] Galamian, *Principles of Violin Playing & Teaching*. 17, 18, 22, 24, 25
[25] Flesch, *The Art of Violin Playing*. 17, 27
[26] Sometimes young students want to lean with the wrist against the side of the violin in third position. Although the contact of the wrist and the side of the violin is permitted, a teacher must ensure that the student is not relying on this contact to arrive in a particular position.

There are a number of short etudes composed for this shift. It is recommended to start with a study where this shift is played with separate bows and in simple rhythms (minims, crotchets, and quavers) due to the ease of coordination of the movement of left hand. Some simpler etudes for this type of shift are more similar to exercises and lack musical content (Ex 3). This type of exercise is an important step in the development of shifting, however it should be used sparingly, to prevent loss of interest in the young violinist. However, there are etudes that combine recurring open-string shift within a musical content. An example of this is A. Komarovsky's Op. 2 No. 26 (Ex. 4).

Ex. 3 M. Garlitski "Step by Step"

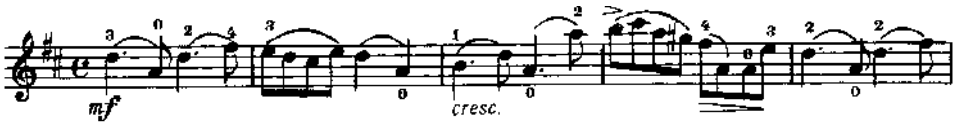


Ex. 4 A. Komarovsky Opus 2 No. 26

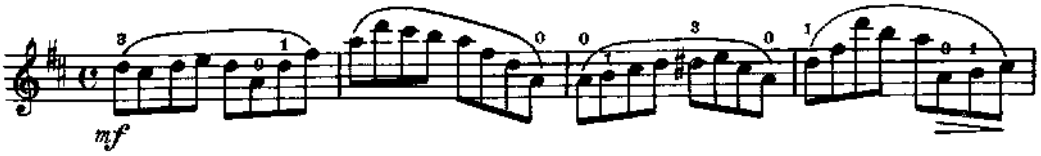



Further work on open-string shifts will require the introduction of this shift to the second position (Ex.5), in slurs (Ex. 6), in a context of arpeggio (Ex. 7) and in longer studies (F. Wohlfahrt Etudes Opus 45 Nos. 32-35).

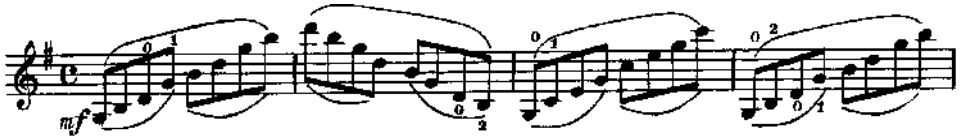
Ex. 5 A. Komarovsky Opus 2 No.8




Ex. 6 F. Wohlfahrt Opus 74 No.33

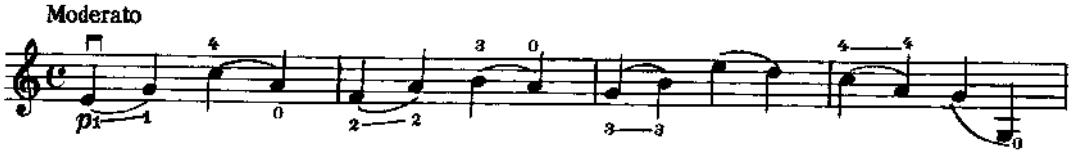


Ex. 7 F. Wohlfahrt Opus 74 No. 30



The *same finger slide* forms the foundation of the *B and L slides* by preparing the fingers to slide lightly on the string. The point of attention for the student would be the relaxation of the sliding finger before the slide (keeping the contact with the string, but not the fingerboard), then the slide itself and finally the arrival in the new position. Galamian also stresses that: "The bow, too has a considerable role to play [...] by moving slower and by diminishing the pressure during the actual change of position it can eliminate a great amount of sliding sound [...] This is a point that should be stressed, especially in the beginning stages of instruction"[27]. In his *Selected Studies* Fortunatov recommends etudes by Komarovsky (Volume II No.27, Ex. 8, slides between 1st and 3rd positions) and Wohlfahrt (Opus 45 No. 48, Ex. 9, slides between 1st and 2nd positions) as good introductory etudes for this technique. Other etudes for this type of shifting include Wohlfahrt Opus 45 Nos. 39, 41 (the latter combined with the *Open string shift*).

Ex. 8 A. Komarovsky Volume 2 No.27

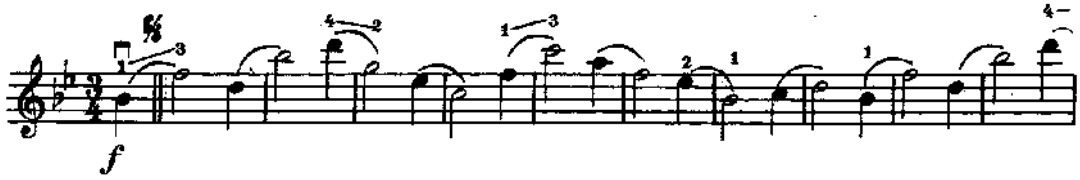



Ex. 9 F. Wohlfahrt Opus 45 No. 48

While increasing technical complexity, the *B* slide should be introduced next as it builds on the abilities acquired in the previous types of shifts, namely the motion of the hand and the relaxation of the sliding finger. *B-, L-* and *Combination* slides can be practiced on the same etude material, however, not at the same time. As *L-* and *Combination* slides are used more in a musical context rather than for the "transportation" of the hand, it is recommended that a young violinist begins learning this group of shifts with a *B slide*. Komarovsky's Volume II No. 28 (Ex. 10) can be a good preliminary study for this slide.

[27] Galamian, *Principles of Violin Playing & Teaching*. 27

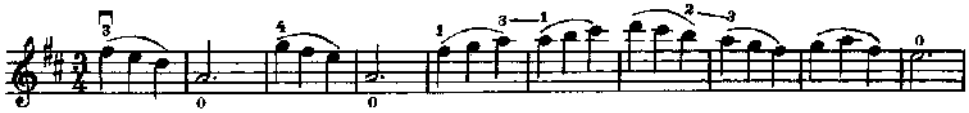
Ex. 10 A. Komarovsky Volume II No. 28



Galina Turchaninova recommends that the *L slide* finish on a vibrato note[28]. This seems a valid point, as a quasi-glissando at the end of the slide will sound musically inappropriate unless followed by a note with vibrato. Therefore the ease of vibrato needs to be considered before the introduction of *L*- or *Combination* slide. Komarovsky's study (Volume II No 28) cited earlier has a minim length note as the arrival note of the slide. Accordingly there is the flexibility to use this study with vibrato and *B*-, *L*- and *combination* slides.

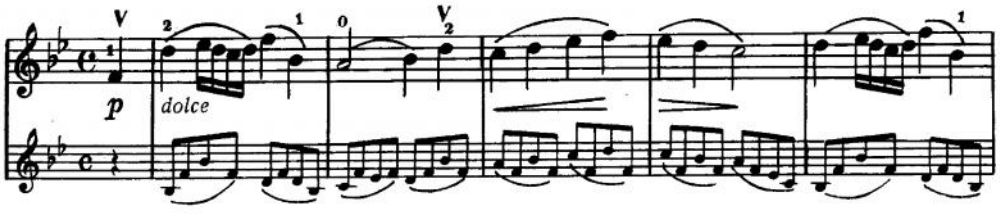
The *substitution shift* is executed by substituting fingers on the same note, as well as constituting a type of shift needed in a scale. The use of this shift in a scale signifies the importance of freedom and precision in executing this shift. The focus of attention in etudes using these shifts should thus be on the new finger getting prepared and on "pushing" the previous finger out of its place. Gnesina's etude (Volume II No. 2,Ex. 11) can be an example of a good elementary study for such a *substitution shift* (1st to 3rd positions).

Ex. 11 E. Gnesina etude (Volume II No. 2)



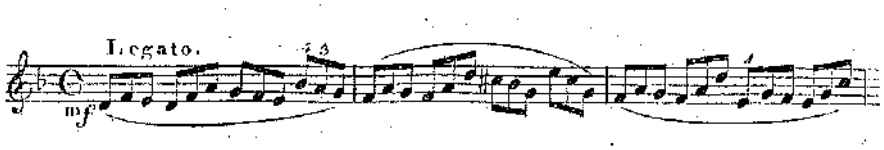
There are a number of exercises written for the *retarded shift,* however only a few are appropriate for young violinists. A number of simple etudes and duos containing the *retarded shift* can be found in the '*Violinschule von Ries-Sitt*'[29] (1873). Hubert Ries also employs the same *Retarded shift* idea as a primary means to shifting in his Etude No. 6 from "12 Studies for the Violin" (Ex. 13)

Ex. 12 H. Ries, H. Sitt Violin School (Vol. 2 No. 206)



[28] Galina Turchaninova, "Teaching the Violin Basics.," (Lecture, Teacher Development Lecture Series, Moscow1996).
[29] Hubert Ries and Hans Sitt, *Violinschule Von Ries-Sitt* (Leipzig: F. Hofmeister, 1915).

Ex. 13 Hubert Ries Etude No. 6 from "12 Studies for the Violin"

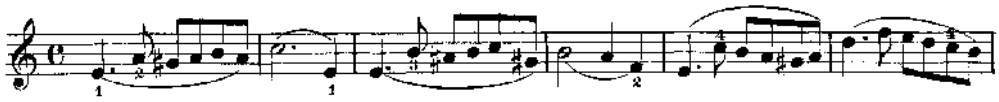



## *Etudes using combinations of different types of shifts*

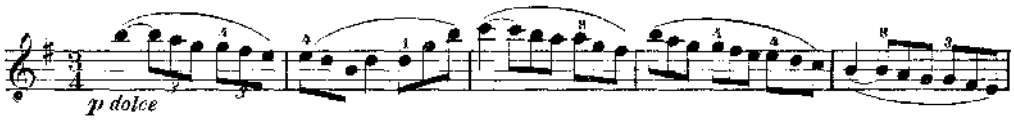
Once the different types of shifts have been explained and the student feels comfortable with them, etudes combining various types of shifts can be introduced. This greatly helps the student to start applying their knowledge in choosing the appropriate type of shift. I have observed in my teaching practice that following an initial introduction of different positions and the movement of the arm between the first three positions, the *shift through the open string,* the *same-finger slide,* the *b-slide* and the *substitution shift* can be introduced closely together.

After the first three types of slides are introduced Wohlfahrt's etude Opus 45 No. 47 (Ex. 14) represents an excellent example of a study containing a combination of these slides. Wohlfahrt's etude Opus 45 No. 58 (Ex. 15) is a good study combining the *Substitution shift* with other types.

Ex. 14 F. Wohlfahrt Opus 45 No. 47



Ex. 15 F. Wohlfahrt Opus 45 No. 58




A successful preparation of the last two etudes completes the introductory stage of learning about the position playing and shifting in the early development of a young violinist. It opens up the possibilities of freely playing in the first three positions. At this point all the Wohlfahrt etudes Opus 45 as well as Kayser's Opus 20 become accessible. The further choice of etudes can be determined by the combination of skills that are needed to be developed at that moment.

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# *Tadeusz Wroński on Practice: A translation of Chapter Four ("Work on Playing") from "The Technique of Violin Playing"*

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Technical development as the pursuit of physical freedom is arguably one of the most important areas of violin study. Without an ability to execute movements with ease and comfort one cannot attain deep expression and communication of the often demanding and exhausting repertoire of a concert violinist. One of the most relevant and informative chapters within Tadeusz Wroński's *The Technique of Violin Playing* (chapter four "Work on playing"), contains a detailed discussion on the nature, planning and variety required within technical practice. The author reflects upon personal and pedagogical experience, extensively debates and discusses his method whilst providing invaluable suggestions important to all students and pedagogues. This free translation aims to highlight the wealth of knowledge of this somewhat neglected Polish pedagogue and his value in sparking discussion of commonly held notions concerning material, practice methods and the structure of development.

Tadeusz Wroński's *Technique of Violin Playing* is invaluable in discussing the nature and thought needed to maximise productivity within technical practice. Highlighted personal and pedagogical experiences, discussion of method and suggestions are all based upon a structured, thought out yet flexible approach taking into account complex physical and mental phenomena within violin teaching, learning and performance. Wroński's holistic approach to technique requires a degree of discipline and organization on the part of the performer, an ideal which however unattainable in its entirety, is noble and worthy of pursuit and reflection.

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Technical practice is often chaotic, panic driven, unstructured and erratic in students, lacking proper work on any technical area. Just as time for technical work is frequently wasted by the knowledge that pieces are waiting and there is less and less time before an upcoming lesson, so too work on repertoire is spoilt through feeling guilty about neglecting proper technical preparation or having spent time where nothing more than a warm up was achieved. My first recommendation is that work with the violin should be thoroughly planned and one must execute practice with full knowledge that it is needed and that it saves time later when working on repertoire. One and a half hours a day is sufficient time for pure technical work. Through planning and uncompromising performance of technical exercises, one introduces a sense of inner calm and a clear conscience into practice.

This is just the first step; the next question is what one should practice in this time? Jumping from problem to problem is chaotic and unsatisfying. Daily practice of scales from Flesch's Scalesystem, despite the benefits that can be derived, is not sufficient due to a lack of work on the bow arm. One must practise trills, finger patterns, staccato, arpeggios, chromatic and diatonic glissandi, position changes (as a special problem in itself), left hand pizzicato, vibrato, fast passages, spiccato,

sautillé, ricochêt, grand detaché, harmonics and much more. Numerous situations occur during practice. For example: we start practising thirds and after playing a couple of scales we feel that we are playing them better and better. We focus on this problem and when an hour of work has passed in a blink of an eye we do not have any time left to work on other problems. The next day we naturally do not practise thirds at all but focus on different issues.

Another example is when one day a violinist reminds him- or herself of the fact that for a couple of years he or she has not practised double harmonics and left hand pizzicato at all. They throw themselves on these elements, spend a lot of time over a couple of days on them only to put them away again with the sad feeling that they are not coming out as they hoped (nothing unusual in this!). From this emerges the thought that like a sportsman we should establish a comprehensive plan for technical training. Alas, at this place everyone seems to stop due to the huge amount of technical components seeming impossible to contain within an hour and a half, the view of our work as "soulful" and the idea that a formulaic and arithmetically planned approach is blasphemy. In the best situation a violinist practises a couple of ordinary scales and double stops, a few problems, some exercises given by the teacher and this is where the technical work ends.

The phenomenon that despite this approach some violinists derive good and even exceptional results is one of the great mysteries of nature. The ability to play the violin is an organic and holistic process which does not develop merely through isolated work on individual aspects, but grows as a whole. To illustrate this fact I would like to give an example from my own life. Upon graduating from the Warsaw Conservatorium in 1939 I performed, amongst other pieces, the Brahms Concerto. At that time I fell ill with inflamed nerves in my left hand and well remember my problems playing tenths in the concerto. I was left with physical injuries and even a few years after the pains had subsided I avoided tenths, fearing a return of the pain. In 1950 I began practicing the Concerto after 11 years of not playing tenths at all. I discovered that they came out with far more ease than before. I was perplexed by this fact and for the first time understood playing in a certain organic wholeness. After 11 years, my playing had developed in all sorts of ways and in this time areas had developed which had not been worked upon at all. It is clear that these elements could only develop because playing is not the sum of separate, independent abilities but an organic whole, developing holistically. We all discover this fact, the proof being when we occasionally tell ourselves “This and that is not really coming out but in a year or two, when I am playing better, I am sure it will” and often we are right.

We cannot, however, base our work solely on the wonderful talent of our organism to synthesize all elements of playing such that they spread throughout our performance. In the case of my tenths, one can be certain that if I had practised them normally over 11 years I would have played them even better! My pedagogical experience has told me that the level of organic, holistic development within playing is linked to the level of talent. The less talented the student, the more scrupulous they have to be in their practice of every “screw” and cannot forget about any area. The more talented the violinist, the more brilliant their progress appears due to any playing or doodling acting as a medium in which their holistic playing develops. If they also cared about “every screw”, the results would be amazing. If we want to

achieve the most with our gifts we must observe everything in our playing and not merely drain our talent.

We should try to comprehensively highlight and assess the idea of one and a half hours of technical violin practice. Carl Flesch made an interesting discovery that better results stem from practising a certain element for a few minutes daily over a long time period rather than an hour a day over a shorter time period. It appears that practice of any specific element does not have to be long in terms of daily work but that it has to be performed every day over a longer period of time. To master a technical problem one must train it regularly in small portions over many months and years. One can derive benefits from Flesch's truth by planning daily work to encompass all elements of left and right hand technique in small portions of minutes, the sum of which equals one and a half hours. Is this possible? It is!

*Wroński's Template for Technical Practice*

Left Hand
Normal scales and passages – 10 minutes
Thirds – 5 minutes
Sixths – 5 minutes
Octaves – 5 minutes
Fingered Octaves – 5 minutes
Tenths – 5 minutes
Short trills – 3 minutes
Chromatic glissandos – 2 minutes
Diatonic glissandos – 2 minutes
Changes of position and high positions – 4 minutes
Fast runs – 2 minutes
Vibrato – 2 minutes
Pizzicato – 3 minutes
Single harmonics – 3 minutes
Double-stop harmonics – 4 minutes
Total time: 60 minutes

Right Hand
Checking general technique (bow parallel to bridge, good bow contact) – 3 minutes
Grande detaché – 2 minutes
Detaché – 3 minutes
Martèlé – 2 minutes
Staccato – 3 minutes
Spiccato – 2 minutes
Sautillé – 4 minutes
Viotti stroke – 2 minutes
Ordinary arpeggios – 2 minutes
Bouncing and ricochêt arpeggios – 2 minutes
Thibaud exercise – 2 minutes
Three string chords – 3 minutes
Total time: 30 minutes
Together 60 + 30 = 90 minutes

Before I discuss this plan I have to stop at a certain point which will bring a smile to more than one reader's face. I am talking about the uncommon two to three

minute time periods in which we could train various technical elements. What could one learn in such short period of time? Is it realistic? I regret that I cannot ask you, the reader, the following question and hear your response. The question is: Do you practise in a year left hand pizzicato for 1095 minutes? For 18 hours? Do you dedicate 730 minutes a year to practising your vibrato? 12 hours a year outside from any sporadic work on it within pieces? I am certain that a violinist using another method will not attain in yearly numbers this level of work on every technical element. Such two minute intervals lead to huge benefits and one must also consider that we encounter these elements in pieces, so that the total sum of work is much larger than the numbers I quoted. Practising according to this plan facilitates exclusive work on each technical area.

*A detailed explanation of several points from both left and right hand lists is presented selectively in this translation.*

Left Hand:

*Point No 7*: Practice of the short trill stimulates the left hand assuming that one obtains its impulsive character and energetic synchronisation with the bow hand. Compared to all different types of left and right hand movements, the energy of both arms must be identical in the short trill. I do not accommodate the long trill in my list of technical elements to be practised because it tires the hand and is very rarely encountered in large portions within repertoire. If someone has problems with it they can add it to the list, those who have no problems with it can omit it from practice.

*Points No 8 and 9*: Chromatic and diatonic glissandos should be practised on separate notes as well as on double stops. Like the short trill they act to calm the energy of the bow hand. Chromatic glissandos are very difficult for those who do not practise them.

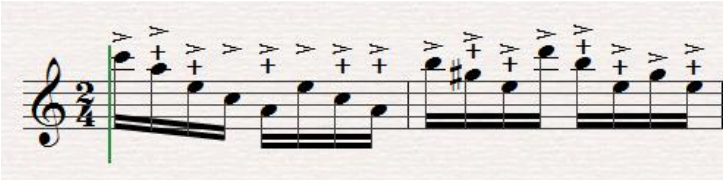
*Point No 10*: I mention any change of position in practically every form within left hand work to draw attention to the varying ways in which one can perform them. Playing in high positions with and without shifting is mentioned however I identify it as a separate issue on account of the specific difficulties it poses.

*Point No 11*: Fast runs are also mentioned as a separate point however could be placed within point number one (simple scales and passages). I am concerned primarily with the feeling of impulse within runs.

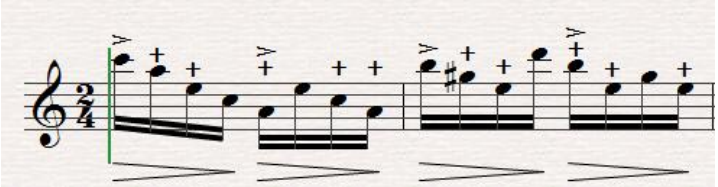
*Point No 12*: Vibrato should be practised (if there is a need) on both long and short single notes. In the later, it has to have impulse (just like the short trill) and be aligned to the energy of the bow hand.

*Point No 13*: Pizzicato should be practised using examples from repertoire (Paganini, *Caprice No 24*; Sarasate, *Spanish Dances*). At the beginning practice should be soft and there should be an impulse in the hand on every note. Linking notes in

groups should be attempted only after having mastered any problems. So firstly it should be practised



The sign > indicates the impulse of the left hand even when the sound is played by the bow. In the following example one must form energy in the hand in line with the musical grouping.



The signs > (accents) indicate the main energetic impulses. The longer accents signify a relaxation but not a diminuendo.

*Point No 14*: Practising single and double-stop harmonics, even if one would not perform them on stage, is great for the left hand. The naturally develop preparation, lightness and movement precision whilst making the feeling more subtle between the hand and instrument.

Right Hand:

*Point No 1*: Checking general technique only takes into account certain issues. Actually all points in the right hand category help develop general technique but the first, the control linking the bow with the violin, is the most important and most neglected. It consists of two elements, the parallel movement of the bow to the bridge as well as the even contact of the bow hair to the string in every part of the bow. Methods of checking these elements vary but I do it through repeated bow strokes from the frog to the tip and back in rhythmic units, checking for a feeling of gravity/weight in the right hand after each sound.

*Point No 2*: Grande detaché should be played with the whole bow with as fast a movement as possible together with large pauses after each sound in order to relax, correct the state of the bow, resist the next sound and focus energy before playing it.

*Point No 3*: Detaché, the daily bread and butter of the violinist, often does not sound good enough. During "clean" technical practice there is an opportunity to focus deeper on the mechanics of this bowing.

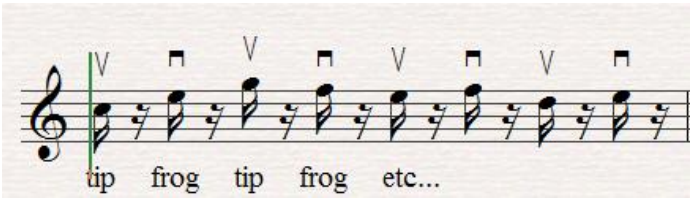
*Point No 4*: The martèlé stroke contains large tonal possibilities depending on the chosen tempo, dynamic level and area of bow (frog, upper half or the middle).

During a few minutes of martèlé practice it is necessary to go through all its different types.

*Point No 5*: I give three minutes for staccato practice but the amount of time depends on the difficulty this bowing presents to the individual. In my three minute proposal I assume that the performer has a basic mastery of technical elements but with staccato matters are often different. It is a stubborn and difficult bowing to master by someone who has not developed it "naturally".

*Point No 8*: The Viotti stroke is well known. I reserve specific discussion of this bowing to my other publication called "The instrument of playing".

*Point No 11*: I mention the Thibaud exercise after Flesch. It has the following benefits: a) it forces one to have a strong hold of the bow, b) it forces quick movements of the right hand and c) it requires a light movement of the arm and immediate contact between the bow and string.




*Point No 12*: Playing three string double stops often leaves a lot to be desired. The most common fault is the forceful yanking of the chord from the violin. Before this the bow often stays on the string which causes a strong snorting sound when it is moved. In minimizing the strength of bow contact, bow speed is often slowed and the chord scratches yet again. When trying to further refine the movement, often notes (either the lowest or highest) from the chord do not sound. The violinist then tries to play with a kind of arpeggio bow movement like the following line:

Another fault is attacking the string with the bow from the air which gives a brutal result. Here are a couple of points, so that three string chords sound good:

One should play all notes simultaneously, without arpeggiating;

The amount of energy used when playing these chords should not exceed that used when playing two note chords at the same dynamic level;

The energy of the arm movement should have an impulse in that the beginning of the chord should be "strong" with an immediate and very quick release of the energy. In other words, the movement of the arm should have thrust and momentum. The bow should not attack the string from the air nor begin from the string. Playing should commence exactly when the bow touches the string

The movement of the bow should be flat  or a little bent at the top 

and not  which resembles the convexity of the bridge.
The bow should move as if it were centred on the middle string

When practising chords during everyday technical work, one is required to carefully trace problems and by the end be able to perform them in every part of the bow, in any direction and in varying dynamic degrees. At the same time we're training left hand preparation which is linked to chord playing. One has to remember that according to the previous points we're only training standard types of chords but in repertoire, according to style and the musical context, the performance of chords varies from variously broken to more arpeggiated styles.

Returning to the broader picture of this chapter, everyone should analyse the points and based on them, devise their own list. One can eliminate certain points if they are already mastered or link certain points, for example fast runs and ordinary scales, or double stop chromatic glissandos and double stops. One can approach this plan differently through substituting points 1, 2, 3, 4, 5, 6, 14 and 15 with one scale from Flesch's Scalesystem, stopping oneself at 42 minutes (the sum of all the specific technical elements addressed). If someone has a good vibrato they do not have to practice it. The summary put together is as broad as possible in not leaving out anything which could be practiced, but not necessarily meaning that everyone has to train everything. The first thing to do would be to apply the summary to one's particular needs.

After a certain time, despite everything appearing to be fantastic, I discovered a certain flaw in my system. As if my thoughts were not calmed by the number of yearly hours spent training in daily two or three minute periods, in the depths of my soul there remained a certain nervousness, a feeling of insufficiency and uncertainty if this is enough! In order to calm this feeling I decided to introduce into my system of practice what I call a 'special day'. One day of the week should be devoted to practising special problems. After much practice I identified three fundamental types of special days: one devoted solely to double stops, another to shifting, ordinary scales, passages and fast runs and a final one for right arm problems. Saturdays could be devoted for this purpose. I hope, that this decision will sufficiently calm the violinist's conscience due to each of these three problem areas being trained for one and a half hours a couple of dozen times each year.

I previously mentioned that I am not a supporter of painstaking methodical work and quite righty one could argue that I came to my conclusions contradictory to my own experience. This is true and after a certain time a thought began to bother me, that despite my plan, I am just doing the same thing in circles. The rigid tentacles of habit began to spoil the freshness and effectiveness of my original idea. Previous experience helped me further improve my system. I remembered what a positive impact every new discovery and practice of new exercises had upon my playing. I experienced this many times with Sevcik's *Op 1 Book 4*, Flesch's *Scalesystem*, Eberhardt's *Absolute Treffsicherheit auf der Violine*, Jacobsen's *Kreutzer Paraphrase Etudes* and other studies. I also remembered a quote of Professor Jarzębski who responded to a question of mine asking if I could practise according to Flesch with "of course, the left hand likes new things". I reminded myself that after a few months

work on every new position it stopped having a "striking" effect and that a return to old things again acted refreshingly on the energy and feel of my left hand. It took me a while until I found a way consisting of what would appear to be two contradictory truths:

1) In order to master something, you have to perform it over a very long time and every day as well as;
2) the hand likes change and long practice on the same problems acts like a 'break' on progress.

I give the solution below and although it can be read in a few seconds, in reality it developed in my mind over many years. My relevant conclusion is: in order to learn something well one must have the particular problem in one's "workshop" for a very long time, practise it daily but differently each day!

There's no sense for example in practising only scales in thirds in a period of five minutes each day, even if they are in different keys. It's better to practise a legato scale in diatonic thirds one day, scales in thirds (in third steps) like Flesch suggests another day, again differently another time with trills on thirds, thirds with big position changes, chromatic thirds, chromatic and diatonic glissando thirds, naturally, not all of these at once, but each day playing one of these varying forms. Other than this we can practice Paganini's *Caprice No 18* or a fragment of a Paganini Concerto. The point is to play thirds daily but to play them differently each day. This applies to all points on the technical practice list. In order not to fumble and waste time thinking about ways to practise, it would be very desirable for every violinist to devote one page in a special book to each point on the technique list and write out all possible ways to practise that element. It's enough during playing just to look at the appropriate page (where it is a good idea to mark with lines how many times the different forms have been practised) to quickly decide what should be practised that day.

Here is an example of a page from such a book:

Fingered Octaves
Ordinary scales in 2 note legato / / / / /
Ordinary scales in 4 note legato / / / /
Slow trills on each step of a scale / / / /
Octaves from Paganini Caprice No 17 / / / /
Octaves from Paganini Caprice No 13 / / / /
Octaves from Wieniawski Polonaise in D Major / / /
Scales moving in thirds / / /
Passages from Flesch in fingered octaves / / /
Exercises from Sevcik Op 1 Book 4 in fingered octaves / / /

I encourage all violinists to organise and use such lists and an hour spent establishing this kind of book will pay off in the future. With the passing of time one should fill the lists up and in many cases after obtaining sufficient skill in a technical element, one can eliminate any "dry" exercises and leave only fragments of repertoire.

Are there any further flaws in my system? Even if it is theoretically complete, one would be entitled to suspect that there are and any such gaps should be identified and rectified. I convinced myself that getting used to performing technical work daily before playing repertoire is not a good thing. A violinist used to this, when forced to practise without the beginning one and a half hour technical session does not feel good, is not warmed-up and lacks that which had preceded his playing over months or years. One must be able to play at once, in every situation, after every break, in the morning or evening. From this stems a further recommendation that one should practise the list once at the beginning of a day's work, another time at the end and also in the middle. Violinists should find a way that they can always play and not be restricted by prior routine and ritual.

I found another improvement to my system although humanity has known about it for thousands of years. What I am discussing here is the rhythm of rest and relaxation. Long ago people started resting on Sunday after several days work. If this were a waste of time it would have long been abandoned. It turns out however that we regenerate, relax, slow down the speeding week-load of work within our brains and clean our slate of energetic impulse in order for the following one to be new, fresh and unlinked to the previous. So on Sunday one should not practise anything technical but at most play something for ones enjoyment like a Sonata with piano, dedicating time only to musical problems. Maybe it would be a good idea not to play on Sundays at all? With the passing of time I am more and more of this opinion but what violinist could stand the nervousness (besides those born lazy) with the knowledge that they lost one day of practice in a week? (52 days a year + inevitable holiday breaks!) How effectively would one need to practice during the six remaining days for a rest on the seventh to truly be indispensable!

I want to propose a certain other activity which makes my system easier to use. It is a good thing if every evening one plans one's work for the next day so that whilst playing one does not waste time looking through notes. It is not a draining activity, in fact less tiring than the most simple beauty treatment, but odd that I have never met anyone, even amongst my own pupils, who did it! It is apparent that even some violinists who enjoy many hours struggling with pieces, have a certain "inability" and even reluctance in this regard. It truly is a shame!

Technical practice according to my system requires careful control of time whilst playing and a watch should be an inseparable friend of the violinist. When the time set for one element expires one should immediately move on to the next even if he or she feels so comfortable with the current one! Rests between elements (like relaxing a tired hand) are counted as part of work. It's a misconception to think that in the time of a short break one's brain activity stops. The truth of the matter is that the brain continues to work on sorting out material which has just been supplied to it.

In my experience as a pedagogue I have concluded that students react very well to writing out a technical training plan. I suppose that one can use it in varying levels of education. Of course the amount of technical problems will always be linked to how advanced the student is. A student exiting a class at the beginning of a school

year with a written out plan of practice together with minutes feels a bit like a patient leaving a doctor's office or like an athlete commencing a precise training plan after a conference with his/her trainer. This truly gives good results in teaching and the influence of printed or written words is strong. On top of this even if young people do not like practising they do like training and I believe in introducing this idea of "training" to instrumental work.

I would not want this system of technical work which I have proposed to be used in someone's hands as some sort of formal machine used to torture themselves and others. In order to avoid this I have mentioned many ways which make this system more elastic and flexible and I would only strongly defend the fundamental approach that one should train all elements daily and differently each day. Other approaches lead either to anarchy or to slow meandering in circles which dulls a violinist's sensitivity.

Summary Points:

Plan daily technical practice and the time allocated for each element as accurately as possible;
Practise all elements of technique daily;
Practise each technical element differently everyday;
Practise with a watch and fulfil all points precisely in your plan;
Have all "learning aids", including scale compilations, exercises, caprices and pieces, by your side so that you do not have to take a long time to find them;
Plan technical work for the following day every evening on paper;
Once a week introduce a "special day" where you spend time working on a certain set of problems;
Do not practise technique at all on Sundays;
Do not get used to always practising technique before repertoire.

Gather all possible ways of practising every technical element in a special notebook. Always augment and broaden this list with fragments of relevant repertoire to particular technical areas.

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# *Building a Framework for Scordatura: New Possibilities for the Viola and Beyond*

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Scordatura has a remarkable history, with some of the most adventurous forms now four centuries old. The Baroque performer-composer Heinrich Biber turned his violin world upside down – or at least right side left – when he switched strings and even crossed them. Some of the greatest names in classical music including Vivaldi, Paganini, Bach and Mozart, also used this device. The American Founding Father Benjamin Franklin is attributed to have experimented with it as well, producing a string quartet played entirely on open strings.[1]

From the 19th Century a period of simplification and standardization emphasized convenience, limiting re-tunings to the projection-focussed transposition scordatura to retain tuning in fifths. When scordatura re-emerged in the 20th Century, it became a way of exploring new sounds. It was addressed as a form of extended technique, which is ironic on two counts: firstly, this "extension" had been around since the Baroque era (if not earlier), and secondly, this "technique" was used only at the determination of the composer (not the performer).

This article proposes that this historical process reduced the artistic possibilities of the performer and that there are new options for scordatura – not only for contemporary composers but particularly for performers of works from the Baroque and Classical eras. The following includes a framework for a renewal of its use, and discusses three current developments in which well-known and much-performed works can be advanced with the application of scordatura.

## *The Case for Scordatura*

In advocating a return to experiments in scordatura tunings particularly on the viola, it may be useful to consider why musicians gave it up in the first place. David Boyden and Robin Stowell offer some reasons for its downturn:

Most 19th-century composers believed that there was more to be lost than gained from scordatura, on account of its special notation and playing requirements, the detrimental effect of higher tensions on the strings and the instrument, the inherent

[1] Marrocco, W. Thomas. "The String Quartet Attributed to Benjamin Franklin". *Proceedings of the American Philosophical Society*, Vol. 116, No. 6 (Dec. 21, 1972) pp. 477-485. Marrocco notes that the authorship is inconclusive as he was unable to verify through means of examining the watermarks. M. E. Grenander through a wider look at Franklin's life supports the attribution, while Hubert Unverricht puts forward that it was more likely an unknown German musician who wrote the work that was eventually attributed to multiple composers, including Haydn, Pleyel, and Franklin.

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intonation problems (especially if several pieces with different tunings were to be performed in the course of a concert), the need to adapt the bow speed, bow pressure and contact point to suit string textures, tensions and thicknesses, and the resultant changes in instrumental timbre.[2]

Although articulated some two centuries later, it is useful to assess these five concerns about scordatura:

(1) Two of these five factors – notation and bow use – are a matter of convenience rather than a concrete argument against scordatura – the former for the composer and the latter for the performer.
(2) The factor of tension on the instrument is the most serious of the five, but would likely refer to scordatura tunings that push the strings upwards rather than downwards in pitch, or possibly a mixture of tunings that are unstable for the bridge or body of the instrument.
(3) The issue of intonation (insofar as the stability of the strings is concerned) may indeed limit a programme, but arguably programming should be arranged to provide the best context for performance, rather than limiting performance options for the sake of a particular programme.
(4) Changes in timbre would seem to be limited to cases where scordatura is used to facilitate an extension of range or harmonic possibilities and timbral side effects are unintentional. Even if one accepts that these particular scordatura tunings may be disadvantageous, it should not be seen as a reflection of the endeavour as a whole – particularly considering the number of scordatura tunings specifically intended at creating changes of tonal colour.

It would seem that convenience has overtaken aesthetic concerns (and in some modern editions, historical fidelity as well) and perhaps a misconception or generalisation that scordatura was used only as a cure for poor projection. The case of Amon's *Viola Concerto in A Major*, discussed by Maurice Riley,[3] highlights this even further. When faced with scordatura some performers would rather transpose an entire orchestra in order to conform to today's standardized tuning.

The arguments for the revival of scordatura do not ignore its limitations. This writer's opinion is that it should not be categorically discounted and should instead be regarded and further explored as a specialized technique. Musicians of the 21st-century performing music of the Baroque and Classical periods face more limitations than their 19th-century counterparts, most importantly the presence of two more centuries of music largely written for an era of more homogenous tuning. In the case of the viola, Franz Zeyringer notes the issues of standardizing performance of an instrument with an

[2] David D. Boyden, et al. "Scordatura." In *Grove Music Online. Oxford Music Online*, http://www.oxfordmusiconline.com/subscriber/article/grove/music/41698 (accessed April 18, 2011).
[3] Maurice Riley, *The History of the Viola.* (Volume II) (Braun Brumfield Pub., Ann Arbor, MI, 1991), 138.

early history of diversity in size and with alto and tenor violas in five-part harmony.[4] It is similarly limiting to require performances today to conform to standard tuning when dealing with works of the Baroque era and to some extent the Classical era as well. The technique need not be limited to specific scordatura tunings composers prescribed for specific pieces, although this is a crucial first step. Maurice Riley notes that scordatura was "used by mature players who performed solos requiring advanced technique" which accounted for its omission in method books of the period geared towards a younger target audience.[5] In 1688, Georg Falck went a step further when considering the experiments of Heinrich Ignaz Biber, calling it a tool of the "masters".[6] The point here is that beyond specific instructions by composers, historically the adventurous challenges of scordatura were considered a part of professional technical expertise.

## *Functions and Application of Scordatura*

In the New Grove entry on scordatura, Boyden and Stowell list these as the various ways in which scordatura has been used:[7]

(1) Alternative harmonic possibilities;
(2) Extending the range of the instrument;
(3) Imitating other instruments;
(4) Enabling the execution of large intervals, string crossing, or unusual double-stopping (including *bariolage* string crossing);
(5) Emphasis of particular keys;
(6) Increasing projection.

Many of the examples provided served as independent, specific goals of a particular scordatura. This list can be thus viewed as selected possible options rather than as categories of overall effects. From another perspective the unusual quartet by Benjamin Franklin surprisingly reflects more than one of these: it extends options for the ensemble allowing a performance using only open strings, in part as a musical joke. It possibly also serves as a philosophical metaphor, "so the 'common man,' with very little tutoring, could participate".[8] It also possibly imitates the technique of water-filled wine glasses which led him to develop the *glass armonica*.

To discuss this in more detail, we have to approach the scordatura traditions of different instruments.

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[4] Franz Zeyringer. "The Problem of Viola Size." (*The Journal of the Violin Society of America*, Vol. V, No. 4, Queen's College Press, 1979), 19.
[5] Riley, *The History of the Viola. (Volume II),* 138.
[6] Boyden and Stowell, et al. "Scordatura." In *Grove Music Online*.
[7] Ibid.
[8] Grenander, M. E. "Reflections on the String Quartet(s) Attributed to Franklin." *American Quarterly* Vol. 27, No. 1 (Mar., 1975), 73-87.

## *Convergences of Scordatura Use on the Violin and Cello*

The violin and the cello share a number of surprisingly similar traditions in the use of scordatura, in ways that are somewhat distinct from that of the viola.

Biber's *Rosary Sonatas* for unaccompanied violin and Bach's *Suite No. 5* for unaccompanied cello have very obvious initial differences. The *Rosary Sonatas* take advantage of switching strings and even taking the term "cross-tuning" literally in having strings cross paths behind the bridge. There is ambiguity in the use of scordatura in the fifth suite, with the A string tuned down to G possibly to link it to lute tuning, or as an attempt to better place voicing and voice-leading across the four strings – a concept called vocal fingering which will be discussed further below. However, a commonality of both works is the use of scordatura not only to affect timbre, but the underlying changes in resonance. Patricia and Allen Strange write of the *Rosary Sonatas*:

"It was originally assumed that the tunings in von Biber's works were specified to facilitate various fingerings, but contemporary musicologists have put another spin on his works: the scordatura in the *Rosary Sonatas* brings out the fundamental resonance of each individual work, and something of a qualitative change in mood develops through the course of the sonata cycle".[9]

In contemporary works, composers for both the violin and the cello have used what would seem to be a disadvantage of scordatura in so far as the affected string is tuned differently to the specified pitch of the string makers. In other words, the usual handicap of reaching a scordatura on a string that is too loose or too tight – more so the former than the latter – instead creates novel sound effects.

In tuning to A flat–G–d flat–f and applying the bow with considerable pressure (and held with two hands) vertically over two strings, Lachenmann's *Pression* for cello produces contrasting timbres between a string at the calibrated tension and one intentionally departing from its intended tension. This is similar to the use of "dynamic scordatura"[10] for the violin, progressively detuning strings to the point that the volume is diminished alongside a rusty timbre.[11] In Ulrich Suesse's use of this device the direction is unambiguous: "Scordatura by ½ tones 'till string is almost totally loose!" and still underscored by additional sound effects: "Imitate sleeping, snoring voices interrupted with light scraping noises".[12]

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[9] Patricia Strange and Allen Strange. *The Contemporary Violin: Extended Performance Techniques*, (University of California Press, Berkeley, 2001)„ 177-8.
[10] Ibid., 182.
[11] It is similarly applied to the bowed guitar in Samuel Holloway's *Sillage* in imitating the sound of water in the wake of passing ships (2010).
[12] Strange and Strange. *The Contemporary Violin: Extended Performance Techniques*, 182.

This use of scordatura seemingly for extra-musical effect has been around for quite some time with Haydn placing an instruction for the violins to tune down G strings to F, and back up again to sonically point to a 'distracted' conductor.[13] As for the cello, the initial part of the humorous introduction in the Musette of *Hush*, by Yo-Yo Ma and Bobby McFerrin, could be said to be in the same vein.

The violin diverges from the cello in the occasional use of the "transposition scordatura" – keeping the strings in fifths, but moving the strings upwards in pitch to produce additional projection (in effect to the opposite end of Lachenmann and Suesse's approaches in using strings calibrated for lower than standard pitches). Even with its notable use on the violin by Mahler and Paganini, the violin finds itself with a partner with unusually far more experience in the transposition scordatura: the viola.

## *Scordatura for the Viola*

Scordatura was largely used to increase projection of violas in the 18th and 19th centuries. Riley lists nine concertos with the technique during this period, by Mozart, Vanhal, Stamitz, Druschetsky, Voigt, Sperger, and Amon.[14] All of these fit the description of "transposition scordaturas"[15] which reflects withdrawal from experimentation to conform for difficulties of notation and tonal side effects when strings are not tuned in fifths. As a likely unintentional result, there is one chord in the viola part of Mozart's *Sinfonia Concertante for Violin, Viola and Orchestra in E-flat major KV 364* that can be played without alteration only in the scordatura tuning.[16]

In modern repertoire, Riley mentions Fernando Griller's 1984 concerto for viola, which combined projection with increasing options of natural harmonics.[17] It is unclear whether the additional effect of tonal colour was a simultaneous goal or incidental. The former would demonstrate the ability of scordatura to perform multiple roles, while the latter would engage the 19th-century argument against timbral side effects resulting from the use of scordatura.

The application of the other functions of scordatura in the Baroque era is more relevant to violin rather than viola repertoire. This is largely due to the extent in which solo material for the violin outnumbered that of the viola and also to the large role that Biber played in the extension of scordatura possibilities in his violin sonatas. In later repertoire, the third variation of Richard Strauss' *Don Quixote* requires a solo viola to tune the C string down to a B – using one of the rare instances of notating at pitch rather

[13] Haydn, Joseph. *Symphony No. 60 in C major "Il Distratto"*, Salzburg: Haydn-Mozart Presse, Salzburg (1959), 68.
[14] Riley, *The History of the Viola.* (Volume II), 139-140.
[15] Boyden and Stowell, et al. "Scordatura." In *Grove Music Online*.
[16] The tenth utilizing an open G-sharp string, m. 12 of the first movement cadenza.
[17] Riley, *The History of the Viola.* (Volume II), 143.

than of fingering. In Sun-Young Pahg's *ThresholdIng*, the viola is asked to tune up the D string as far as E quarter-sharp.

For both the violin and the viola it is interesting to note that all but one of the examples provided by Boyden, Stowell and Riley illustrate scordatura as a composer-dominated activity – the exception being North American and Scottish fiddlers.[18] Once again, it would seem ironic that the application and success of an instrumental *technique* would result from the vision of the composer, rather than from the hands of the performer whose role it is to explore the optimal way to realize a composition instrumentally. Performers have felt free to change bowings, dynamics and in the case of Walton's *Concerto for Viola and Orchestra*, even pitches,[19] but in the realm of scordatura it took some time before it became normal to perform Mozart's *Sinfonia Concertante* in the only form the composer put to paper. Writing in 1991, Riley pointed out that only one modern edition at the time provided the D major scordatura version[20] and only after more than three decades of an illustrious career did Nobuko Imai try out and record the original scordatura, afterwards saying, "My only regret is that we haven't done it sooner!"[21]

## *Extensions of Scordatura: Bach and Mozart*

Current approaches are placing scordatura decisions back in the hands of the performer. Donald Maurice's approach of adjusting fingering that best provides for voicing is applied in an upcoming edition of Bach's *Suite No. 5* for unaccompanied viola, where the scordatura is extended to the top two strings.[22] In *The Art of Vocal Fingering in String Playing*,[23] Maurice puts forward a historical perspective that Bach's works for solo violin in particular indicate an inclination to see the four strings as four voices. That, in consideration with the theoretical perspective of changing strings in relation to tetrachords, allows for a new perspective of the intent of the scordatura in Bach's *Suite No. 5*. If indeed Bach's instruction of tuning the A string down to G was an experiment to allow for A flats of the soprano line to be placed on the top string, then tuning the D string down to a C would complete the voicing patterns for the alto line. The new edition uses note-tail directions as well as a double-stave format to indicate the division of notes and voices.

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[18] Boyden and Stowell, et al. "Scordatura." In *Grove Music Online*.
[19] James F. Dunham, "The Walton Viola Concerto – A Synthesis." *Journal of the American Viola Society*, Vol. 22, No. 1 (Spring 2006), 15-16.
[20] Riley, *The History of the Viola.* (Volume II), 139. Currently, Bärenreiter and Henle publish the original scordatura version.
[21] Paul Myers. Programme notes to the Sony-NDR recording, Sony Music Entertainment Inc., 2001.
[22] Andrew Filmer and Donald Maurice, *Suite for Unaccompanied Viola Arranged from the Cello Suite No. 5 BWV1011 and the Lute Suite BWV 995*. [In press, Comus Edition.]
[23] Donald Maurice. "The Art of Vocal Fingering in String Playing" (*American String Teacher*. August 2006, Vol. 56, No. 3), 27-31.

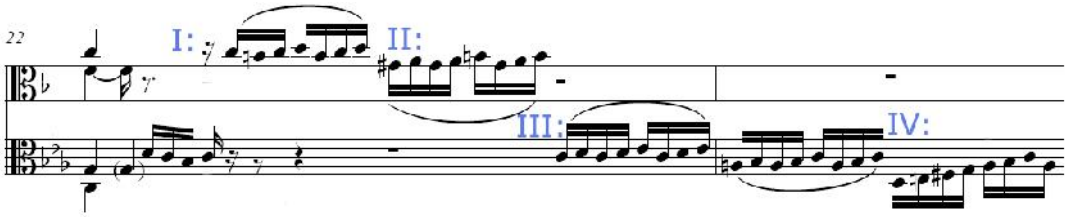


*Illustration 1: Division of voicing by staves and note-tail direction, Prelude m. 22-25*

In an extension of this model, data on the viola's resonance frequencies has been applied in order to approximate the role of the *viole da gamba* in Bach's *Brandenburg Concerto No. 6, BWV1051*.[24] The issue of instrument size versus the standard tuning of the viola in comparison to the violin is certainly well-known. Kim Kashkashian provides this description:

"The viola is still in a state of flux, of experimentation; every few years somebody comes out with a new, differently shaped viola. But one thing they all have in common is that the string length and the pitch aren't exactly right for each other. The viola is tuned a fifth lower than the violin but is only a few inches longer. Ideally, the viola should have a longer string, acoustically speaking, but then you couldn't play it. This discrepancy gives it that particular kind of tone quality that we might characterize as human, perhaps because it's less reliable."[25]

This issue has been approached largely from the point of view of construction with Hermann Ritter in the early part of the last century trying to adjust the instrument's dimensions to better match the proportions of the violin. Even then it was recognized that "violas which are too large approach in sound the baritone quality of the cello, which should be avoided."[26] Ritter was possibly moving the viola's resonant frequencies and in that process departing from Kashkashian's description of the 'human' nature of its tone.

The approach taken in the new substitution of the *viole da gamba* parts in Bach's *Brandenburg Concerto No. 6* is to emphasize resident resonant frequencies, determined by Hans Johansson to be at approximately 230Hz and 350Hz, equivalent to B flat and F, relative to A = 437.[27] This is the *scordatura* substitution:

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[24] J.S. Bach. *Brandenburg Concerto No. 6*. Study score, prepared from the autograph, and edited for scordatura viola substitutions of the viola da gamba parts, ed. Andrew Filmer. Comus Edition, UK. (forthcoming)
[25] Edith Eisler, "Profile: Violist Kim Kashkashian", *Strings*, Aug./Sept. 2000. http://www.stringsmagazine.com/News/Interviews-Profiles/Profile-Violist-Kim-Kashkashian (accessed April 16, 2011).
[26] Zeyringer, "The Problem of Viola Size.", 22. There is a similar passage in: Maurice Riley, *The History of the Viola.* (Volume I) (Braun Brumfield Pub., Ann Arbor, MI, 1993), 232.
[27] Hans Johannson,. www.centrum.is/hansi/modal%20analysis.html

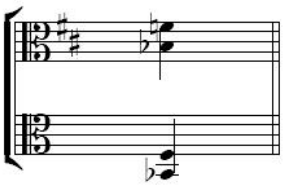

*Illustration 2: Scordatura model for viole da gamba substitution in the Brandenburg Concerto No. 6 based on resonant frequencies*

The significance of it is the new application of scordatura based on resonant frequencies with the additional benefit of some clearer voicing than would be possible with regularly tuned violas and a tessitura that avoids the jumping of octaves that would otherwise be necessary.[28] In having strings at a lower tension, the overall texture also better approximates the role of the *viole da gamba* – in a sense, similar to the approaches of Lachenmann and Suesse on the cello and violin, respectively.

Mozart's *Sinfonia Concertante, K364* contains possibilities of a further development of scordatura. It is important to address a possible and credible argument on historical fidelity, namely that this undermines the very concept of preserving a composer's intention in relation to scordatura. There are a few factors to consider when dealing with interpretation in this context. Firstly, the aim is to preserve the use of scordatura as a technique rather than an instruction, which would then involve the idea of experimentation. Secondly, the historical use of this transposition scordatura was intended to increase projection with the possible benefit of convenience in keeping the strings in intervals of fifths. Projection is a musical consideration and any developments to the scordatura should preserve this intent; convenience, however, is negligible in a musical sense. Thirdly, we should consider that in this specific case of the *Sinfonia Concertante* as a genre, there was a marked emphasis towards the work's commercial potential in providing independence to a composer,[29] rather than art exclusively for art's sake which returns the argument to pragmatic considerations. Two centuries later we are able to adjust priorities and to advance artistic concerns over pragmatism in a way that Mozart or Bach could rarely afford in their day.

For the most part, Mozart's scordatura serves the viola well in allowing not only emphasis through increased projection, but also the use of open strings. This is balanced by muting the solo violin and the orchestra with the key of E flat major. In addition Mozart scored the work in the upper part of the viola's range, roughly evidenced by the number of measures of the solo sections that employ the lowest string:

*Allegro maestoso*: 9 measures out of a 357-measure movement
*Andante*: 8 measures out of 129-measure movement

[28] Andrew Filmer, "An Acoustical Journey in Bach's Brandenburg Concerto No. 6: Genre, Instrumentation, and the Quest for Timbre," *Journal of the American Viola Society* 27, Online.
[29] Barry S. Brook, "The Symphonie Concertante: its Musical and Sociological Bases," *International Review of the Aesthetics and Sociology of Music, Vol. 6, No. 1, June 1975*), 140-1.

*Presto*: 16 measures out of a 490-measure movement

This is unusual by any comparison be it patterns of the composer himself (e.g. the Mozart violin-viola duos) or be they similar works (e.g. Bach's *Concerto for Two Violins* or *Brandenburg Concerto No. 6*).

The limited use of the lowest string allows us to address one equally unusual pattern in the cadenza of the first movement: in its opening, the violin uses the open G string, while the viola has to resort to a stopped note. While the discrepancy between open and stopped notes occurs throughout the *Sinfonia Concertante*, it occurs everywhere else in the opposite direction to add additional resonance to the viola and on top of the projection the higher string tension provides. Considering that the lowest open string (C sharp) is not utilized anywhere in the work, a further scordatura upwards of this string to D not only allows the viola to match the violin in the use of the open string, but allows the sequence to match in fingering.

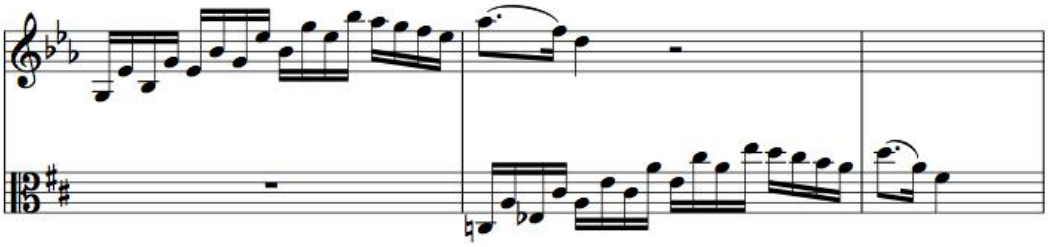

*Illustration 3: Opening sequence, 1st movement cadenza, scordatura of A sharp-D sharp-g sharp-d*

The application of this new scordatura was tested in every part of the work that uses the C string, and while some fingerings became more complicated, there were no instances that affected the work detrimentally from a musical perspective. The use of the open string D is additionally useful earlier in the first movement:


*Illustration 4: 1st movement, mm. 98-101*

The support of the open D string also helps to boost resonance in the second measure of the second movement cadenza (the printed C sharp being a sounding D):

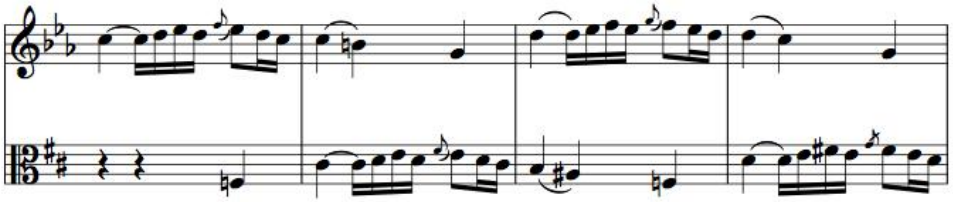

*Illustration 5: Opening measures, 2nd movement cadenza*

This unusual scordatura may only be applicable in this one work, which highlights it as a particular feature. Placed in the hands of the performer rather than the composer, it would be interesting to consider scordatura in the realm of instrumental technique rather than purely through musical composition.

## *A Framework for Scordatura*

With both the history and current developments of viola scordatura in mind, it is possible to outline a model illustrating the functions of scordatura and areas in which it can be developed.

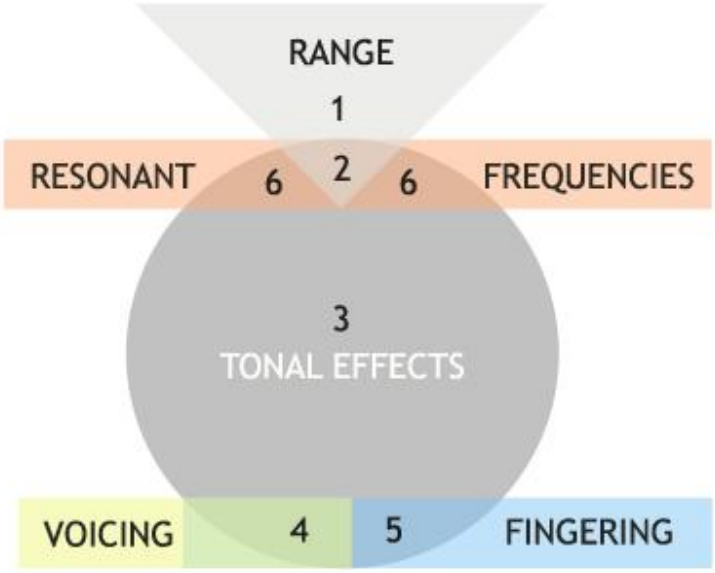


*Illustration 6: A Framework for Scordatura*

The model above illustrates the primary functions of scordatura as affecting range and tonal effects, intersected with larger areas of resonant frequencies, voicing, and fingering.

Section 1 refers to the range and covers both the pitch range of the instrument as well as the range of harmonic possibilities available in a particular tuning. A clear example of pitch range is Strauss' *Don Quixote*, while Griller's *Viola Concerto* extends the range of harmonic options.

Section 2 relates to the present author's use of scordatura in Bach's *Brandenburg Concerto No. 6, BWV 1051* allowing violas to approximate the sound of *viole da gamba* and extending the range of the instrument a full tone, while using data on resonant frequencies to adjust its timbre.

Section 3 includes, but is not limited to, the frequent use of the transposition scordatura (e.g. in Mozart's two *Sinfonia Concertante*[30]). In most cases this limits the lower range of the instrument to provide higher string tension resulting in greater projection.

Section 4 relates to cases such as the forthcoming arrangement of Bach's *Suite No. 5* for viola with extended scordatura aimed at facilitating fingering to match voicing. These represent an overlap of the areas of voicing and fingering. The application of vocal fingering has both the intentional tonal goal of voicing as well as extending the more sombre tone some have argued may be characteristic of this suite.[31]

Section 5 refers to cases such as Mozart's *Sinfonia Concertante*, *K364* discussed earlier which can be advanced with a scordatura D string. This facilitates the use of open strings to match sequences, particularly in the first movement cadenza, additionally emphasizing certain relevant notes elsewhere in the work.

Section 6 demonstrates various new possibilities for contemporary composers to use data on resonance frequencies to determine scordaturas that produce new timbral effects.

## *Concluding Thoughts*

There is some grey area whether the term scordatura should be applied to instruments with no standard tuning system or whether the term *accordatura* is more suitable here.[32] Apart from a question of terminology (and of course the many other instruments to which that would then apply, not least being the *lyra viol*) it is a question whether deviation from a standard tuning is part of the scordatura experience. This author would argue that it is: Lachenmann's contrast of a regularly tuned string against one tuned lower than the string tension calibrated during manufacturing creates a distinct effect; likewise, the use of transposition scordaturas for projection is partially due to the added tension and the resonances with open strings and not with distinctly calibrated strings for the new tuning. Even where changes in string tension are not the primary focus (as in the case of Bach and Mozart discussed earlier) these often become a useful secondary function or at the very least a convenient by-product.

Perhaps the most significant question posed here is: who gets to 'do' scordatura? As a noun it seems to imply a permanent instruction; as a hypothetical verb, it underscores that it is essentially a technique of the performer. Beyond the classical string world, fiddlers and guitarists use this technique on a regular basis. Within it our current

[30] The second being the fragment of the *Sinfonia Concertante in A for Violin, Viola, Cello and orchestra KV Anh. 104 [320e]*, with a reconstruction by Philip Wilby available.
[31] Malcolm Boyd, *Bach*, (J.M. Dent and Sons, 1983). It should be noted that Boyd, while acknowledging this opinion, suggests that Bach was reviving an earlier tuning of the cello.
[32] David Boyden, et al. "Scordatura." In *Grove Music Online*.

musical age separates composers and performers while much scordatura use prior to our times was put forward by composer-performers such as Biber, Mozart and Bach. Perhaps for Mozart, even Bach and most clearly for Paganini scordatura remains a tool for performers as much as for composers. For Biber it also becomes a tool of composition intended to increase the possibilities of the instrument and the new opportunities then presented to him as a violinist. In this light we have to ask whether scordatura has been an item which was handed by the performer to the composer some time ago and if so whether the time has come for its welcome return to the performer's toolbox.

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# *Shifting the Paradigm of Violin Playing: The Significance of Friedrich Adolph Steinhausen*

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Violin playing and teaching rely on knowledge accumulated within a complex history. Untangling influences and sources here seems no easy task. This is in part the result of a discipline determined by subjectivity, individual experience and aesthetic judgment. It is further determined by the relevance of theory to the activity of musical performance and the traditions of theoretical exposition this relevance has generated. Theoretical writings about violin performance and pedagogy tend to be formed and justified by the experience of individuals and their success. They are largely aimed at improving practice and know-how rather than knowledge. To make matters even harder, there are substantial bodies of pedagogical knowledge which are yet to be linked across history and which await appropriate contextual analysis. Two cases from the pedagogical canon illustrate this readily: Galamian's pedagogy is widely acknowledged for its practical success. We can only speculate about the sources of his knowledge, though. His *Principles of Violin Playing and Teaching* remains entirely silent on any sources of this understanding and it is left to us to wonder about any historical influence by his teachers of the Russian (Mostrass) and French school (Capet). Flesch's *Art of Violin Playing* is more explicit here. There is reference to the view of others and even occasional acknowledgement of sources of knowledge. However, on the whole, neither Flesch nor Galamian have scholarly aims. They are aiming to improve pedagogical practice directly. Any theory is first and foremost the result of reflection and analysis of their personal pedagogical understanding and experience.

Beyond the writers on this topic in the English speaking world we face further challenges. The theory of the Russian School which achieved spectacular successes remains inconsistently accessible.[1] The very individual approaches and views of the Polish violinist, teacher and writer Tadeusz Wronski, whose important work[2] on the technique of violin playing remains similarly inaccessible to anyone without adequate knowledge of Polish at this point. So, to ask how our conceptions of violin playing and teaching may have evolved in detail and in its completeness might be asking an impossible question. Nevertheless, when looking at the history of violin playing over the past century, we can isolate turning points to pedagogical thinking which have impacted on practice in ways similar to the paradigmatic shifts or scientific revolutions described by Thomas Kuhn[3]. Kuhn argues that while most ordinary scientific understanding increases within a framework or paradigm of

[1] An exception are some translations into German of writings by Konstantin Mostrass (works on intonation and rhythm) and a collection of articles by Yankelevich, Yampolski, Belenki, Saposhnikov, Mostrass and Agarkow in Kathinka Rebling's *Violinspiel und Violinpädagogik* (Rebling, 2005)

[2] Wroński 1996.

[3] Kuhn, 46 "Paradigms may be prior to, more binding, and more complete than any set of rules for research that could be unequivocally abstracted from them."

fundamental assumptions, so called "scientific revolutions" constitute a shift of paradigm which leads any investigation and understanding towards a new context. In the context of violin pedagogy, the scientific positivism of the late 19th century inspired musicians and teachers to embark on a comprehensive (and at times obsessive) analysis of physiological and psychological functionality. With its principal focus on movement as the defining perspective in violin playing, this analysis culminated in a standardisation of technical, mostly bio-mechanical building blocks. This approach had clearly far-reaching practical and theoretical results.

The theoretical analysis also extended to the physical analysis of sound and sound production on a string instrument, starting with the investigations by Helmholtz in the 19th century. This led towards detailed, practical conceptions of the principles of sound production finding their way into Flesch's exposition of the role and privilege of the contact point[4] which is not significantly modified by even the most recent expositions[5].

In any account of the history of violin playing as a narrative of shifting paradigms a number of individual contributions may thus naturally stand out. In this paper I will discuss one of the earliest such contributions inspired by the scientific investigation of physical movement by Friedrich Adolph Steinhausen, a physician, amateur violinist and pianist born in 1859. Steinhausen documented his knowledge in two books: His *Physiology of Bowing* was by all accounts a successful work and experienced five editions with the fourth edited by the renowned musicologist Arnold Schering and the final edition enlarged by the remarkable violinist Florizel von Reuter[6]. A work on the physiology of piano playing[7] remains in print today and has been translated into English. Steinhausen's work is all but forgotten today. I will try to revive some of his principal insights and argue their sustained relevance for violin playing. I am hoping to show that Steinhausen's conceptions have some potentially unexplored consequences for our practice and that his understanding may in fact be clearer and more significant for pedagogical practice than some of the more recent authors on this subject.

## *Critical reception*

Before I turn to a direct discussion of Steinhausen's work, however, a brief look at its reception will provide an introductory context for discussion. Flesch acknowledges Steinhausen on occasion (albeit critically) for his seminal importance

[4] Flesch 1934, 7
[5] Fischer, 41
[6] For this paper I have relied on the 1920 edition. Steinhausen, Friedrich A. (1920). *Die Physiologie der Bogenfuehrung auf den Streichinstrumenten*. Leipzig: Breitkopf. All citations from Steinhausen are my own translations of the German text.
[7] Steinhausen, Friedrich A. (1905). *Ueber die physiologischen Fehler und die Umgestaltung der Klaviertechnik*. Leipzig: Breitkopf. This work is translated as *Physiological Errors and changing piano technique*, Rochester, N.Y., 1963. (according to Kolneder, 444)

in confronting the predominant and evidently erroneous technical conceptions advocated by the Joachim-school[8] at the time. According to Flesch, the influence of this school significantly retarded violin playing in Germany in the latter part of the 19th century[9] and Steinhausen's analysis on the physiology of bowing was seminal in ending this regress. Immediate contemporaries of Steinhausen's such as the physiologist Wilhelm Trendelenburg (praised by Flesch for his analysis of sound production) take issue with individual details of Steinhausen's analysis in particular in relation to his understanding of the bow hand (which comes remarkably close to Galamian's view) and particular bow strokes. More recent commentators are at times ambivalent without providing clear reason. Kolneder argues that "in some ways Steinhausen's enthusiasm carried him too far" with some of his statements being "exaggerated and one-sided".[10] Not surprisingly, Steinhausen was attacked by disciples of the Joachim School, notably Andreas Moser, the co-author of Joseph Joachim's "Violin School" for his own criticism of the school's faulty technical premises. According to Kolneder, "many of Moser's reservations are well founded". However, regrettably Kolneder fails to disclose which ones he has in mind here making his contribution too general to be relevant.

Steinhausen seemed to have fared better outside a cultural context of reverence for the eminent violinist Joachim. The Russian pedagogue Konstantin Mostrass (a teacher of Galamian) includes Steinhausen's entire chapter on sound production in his book on intonation without critical comment[11]. The cellist Janos Starker cites the importance of Steinhausen to the Hungarian violinist Imre Waldbauer[12] and implies that these ideas may have been seminal at the time. Paul Rolland confirms this when he suggests that in fact "Steinhausen's work was a great impetus to this more scientific style of Hungarian teaching"[13]. Evidently, Rolland's own approach and technical conceptions are informed significantly by Steinhausen. In particular some of his own fundamental principles of movement are explicitly acknowledged to be derived from Steinhausen, while there is critical engagement on occasion as in the case of the rotary movement of the bow arm.

"The principle of rotary movement for tone production was first advocated in 1902 by F. A. Steinhausen. He denounced the wrist movement as used by the Joachim School as an inferior motion which should be replaced by rotary movements of the forearm. He called for the inward and outward rotation of the forearm (pronation and suppination) to increase and decrease bow

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[8] "Vor allem sind hier i. W. Steinhausen und A. V. d. Hoya zu nennen von denen dem ersten das Verdienst gebührt, mit dem Götzendienst der horizontalen Handgelenksbewegung aufgeräumt zu haben während der Zweite die Priorität im Erkennen des motorischen Koordinationskomplexes für sich in Anspruch nehmen kann." (In particular we need to refer here further to Steinhausen and A. V. d. Hoya - the former deserves credit for doing away with the worship of the god of horizontal wrist movement whereas the latter can claim priority in the understanding of the complexities of motor co-ordination." (Flesch, II 73)
[9] Flesch & Keller (ed), 147
[10] Kolneder, 445
[11] Mostrass, 105-109
[12] Starker, 270
[13] Fanelli, 21

pressure…However, Steinhausen did not recognise the advantage of using rotary movement of the upper arm for tone production, a more powerful and reliable movement"[14]

The more recent discussion by Palac gives perhaps the most specific examples of the contemporary appreciation of Steinhausen. Palac cites Steinhausen's "concept of the double leverage around the thumb-and-second-finger axis" as biomechanically sensible and vindicated by modern conceptions of the bow hold[15]. She also cites Steinhausen's identification that "basic bowing motions are curved and that the nearly straight-line path of the bow on the string is due to a combination of curves" and that "no part of the arm should be fixed or isolated"[16] as examples how scientifically based investigations of bowing technique of the kind undertaken by Steinhausen "serve as valid resources for the study of bowing today."[17]

## *Fundamental Insights*

When looking at Steinhausen's writings for both instruments, a number of common thoughts emerge. In the first instance Steinhausen emphasizes the need for a holistic analysis of movement which is ultimately dependent on a mental impulse. No matter what the nature of any particular movement in its partial determination of geometric or mechanical properties may be, the movement in its entirety is always determined by a process within the nervous system which is based on a "mental innervation schema" (*Gehirnerregungsbild*). All work on movement thus is mental work – practice is "in the first instance mental work, learning"[18]. The acquisition or modification of motoric patterns is a matter for mind-body correlation- a phenomenon identified as central much later by Galamian without, however, making any reference to Steinhausen[19]:

"For all types of technical practice, the principle of mental preparation is of paramount importance. It means that the mind always has to anticipate the physical action that is to be taken and then to send the command for its execution. This, it will be remembered is what I have called 'correlation'. It is the key to technical control, and all practice concerned with the building of technique or the overcoming of particular difficulties has to center on the development and improvement of this correlation."[20]

However, Steinhausen goes further into an analysis of movement learning and complexity. According to Steinhausen all learning of movement is based on an already acquired repertoire of movement. This means, that the learning of

[14] Rolland 1974, 35
[15] Palac, 32
[16] Ibid, 32
[17] Ibid, 33
[18] Steinhausen 1905, 26
[19] It is unclear whether Galamian was directly aware of Steinhausen's work
[20] Galamian, 95

appropriate movements which inform our playing technique is never uninformed and is never entirely new or unprepared.

"Every process of movement relies on an already present repertoire. The individual impulse for a movement would make no sense if it was not already determined through manifold earlier experience exactly for the particular size of movement of two bones, for a particular velocity, for a particular dynamism."[21]

The implication here is that all movement learning is essentially a process of adaption: A repertoire of movement is extended and refined to suit a particular task and purpose. Thus Steinhausen can conclude that we essentially learn from our body rather than teach ourselves new movements. This approach Steinhausen pointedly summarizes as follows: We "cannot teach our body we can only learn from it"[22]. By drawing attention to the privilege of already present movements and the inherent capacities of our repertoire of movements, Steinhausen argues against the independent construction of movement devoid of a connection with an imagination for music and sound. He emphasizes instead the need to correlate just such an image with an appropriately selected, refined or adapted movement. The immediate context for the insight that we must learn from our body rather than teach it is the recognition that the fundamental determination of instrumental technique is the musical idea. In the performance of a musical instrument our musical intention must remain the ultimate guide or judge of our technical capacities and decisions. The most accomplished movement remains "even if it appears ever so mechanic, nevertheless a mental process."[23]

The characterisation of instrumental learning as a process of selection and discovery from within a repertoire of already available movements is further supported by a careful observation: complex movements are essentially unconscious and their fluidity and effectiveness depend on their efficiency. A beginner is ordinarily characterised by using excessive movement since all complex movement, unless refined towards high accomplishment, carry with them sympathetic movements (*Mit- Nebenbewegungen*). It is a major task of instrumental learning to reduce and inhibit these unnecessary movements and to achieve a balanced sense of active and passive movement. The task then of acquiring a fluid and natural technique is not the acquisition of entirely new, unknown movements, but the elimination of unsuitable activity, the refinement and adaption of existing movement to a given task.

"Freedom to the limbs, letting go, no anxious holding fast and fixation, because the body, left to its own device, finds the path on its own and with such entire certainty that it is not even distracted by distortion or violation or diverted from its aim"[24].

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[21] Steinhausen 1905, 29
[22] Steinhausen 1920, 8
[23] Steinhausen 1920, 30
[24] Ibid, 37

The aim of technical refinement is a "letting go" (*Loslassen*) which in accordance with the complexity of movement needs to be organised within a temporal sequence. This requirement of release is a matter of mental attention and highlights the relevance of rhythmic understanding and attention for the development of technical ease and freedom. In his 1905 work on the physiological misconception within piano playing Steinhausen introduces an entirely dynamic view of movement as a basis of instrumental technique:

"…nowhere rest and fixation, everywhere never resting, fluid movement. There is no interruption, no stop, no arrest in the air, every even temporary "position" already endures and implies an interruption of movement. It is damaging to deceive the learner with pictures of positions, illustrations of positions and stances about the essence of piano technique, about the swinging, continuous movement. The only possible method of representation would be a cinematographic one."[25]

## *The concept of "swing" (Schwung)*

The fundamental concept of "swing" (*Schwung*) which Steinhausen starts to develop here as a characteristic of all natural movement will lead us towards important consequences for the theory and practice of violin playing. As Arnold Schering points out in the foreword to Steinhausen's *Physiology of Bowing* it continued to preoccupy Steinhausen in the further development of his thinking. A marginal note in his handwriting designed to improve previous editions of this work indicate this direction which, however, it seems Steinhausen was unable to fully articulate on account of his death in 1910.

"Most important is the insight that all practice aims at economy of effort, release, passivity, short impulse and swinging movement. Swinging (*schwungvoll*) is the final aim, perfection, accomplishment, highest ability, perfect technique. Absence of swing is: flawed, artless, not accomplished, thus devoid of spirit."[26]

The identification of the fundamental importance of "swing" is revealing for two closely related reasons: it indicates a desire to move away from mechanical descriptions towards a phenomenological characterisation of movement which include an energetic, dynamic and temporal dimensions. Further, it attempts to introduce us to the importance of temporal organisation of movement where the timing of physical impulse, its profile of energy and its release and recovery play a fundamental role in explaining the effectiveness of the movement itself, the importance of energetic release ("letting go" -*Loslassen*) and the possibility of correlation between mental impulse and physical execution identified above. Early commentators have already cautioned against unqualified emphasis of this "swing"

[25] Steinhausen 1905, 98
[26] Steinhausen 1920, X

character of movement[27] and Steinhausen himself seems quite clear that its importance may be of greater significance to piano playing:

"There the basic form of movement is everywhere free swing in infinite variation and modification; here (*in the case of violin playing*) a strict mechanism restricts the freedom, the swing becomes less significant and only constitutes a part of the muscular activity in playing."[28]

## *Mechanic and dynamic analysis of movement*

Any controversy about the fundamental importance of a swinging characteristic of movement aside, Steinhausen's endeavour to describe an abstract characteristic of movement as a dynamic phenomenon and not merely according to geometric descriptors defining positions in space is a significant step. It has important implications for pedagogical and artistic practice. Furthermore, requirements for a dualistic understanding of movement in the dimensions of direction and energy may not have been sufficiently emphasized - notable exceptions being Galamian's conception of "springs"[29] and the work of Paul Rolland. In distinguishing a mechanic- from a dynamic or energetic description of movement, Steinhausen introduces a new paradigm into our technical conceptions: the essentially static and geometric analysis is complemented by an energetic analysis. This understanding distinguishes impact and timing of forces as essential to the ultimate movement. The insight here is that changing parameters of timing and impulse does not only vary the intensity of movement which otherwise remains identical in its spatial co-ordination, but it in fact changes the movement as a phenomenon in its totality.

It is the task of the player to bring both dimensions of movement to consciousness in her practice. In the case of the mechanical conception of bowing, Steinhausen demands that the mental image of the mechanism must always be clear to the player[30]. This image is completed with the assistance of our kinaesthetic sense providing details of the effective muscular forces and innervations. The sense of proprioception (*Muskelgefuehl*) is vital in supplying us with information about the energetic state of our physical effort. For Steinhausen it provides us with the

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[27] Notably Trendelenburg: "With this his (Steinhausen's) view of the overwhelming importance of the swinging movement (*Schwungbewegung*) is refuted if one understands by this, as Steinhausen evidently does, a thrusting movement. Its essence consists in a moving mass continuing its movement even after the cessation of a dynamic impulse (in this case the contraction of the empowering muscles) until the moving limbs arrive at the limits of possibilities of movement. In contrast to the thrusting movement we find the inhibited movement, in which at every moment the resistance provided by small muscular tensions inhibits the given impulse so that the movement rests in the moment when the empowering muscle no longer contracts increasingly. That we cannot speak about a thrusting movement in the case of a calm stroke appears obvious. That the movement of a *spiccato* might be a thrusting movement is as certain as the fact that one plays a very fast spiccato (*balzato*- springing bow) with an inhibited movement, accordingly with greater muscular tension. (Trendelenburg, 93)

[28] Steinhausen 1920, 10

[29] Galamian, 44. However, Galamian does not develop a comprehensive energetic concept of movement restricting this to the energetic properties of the bow hand alone.

[30] This is also an important emphasized much later by Galamian,

opportunity to "learn the lowest possible degree of activity through consistent 'letting-go'"[31]. The dynamic conception of movement also points towards the fundamental importance of the temporal co-ordination of impulse and recovery (*Loslassen*). A movement in its entirety thus will only function freely and naturally if the partial movements that constitute it are naturally balanced in their contribution to the entire movement. Temporal organisation and order are accordingly fundamental to the characteristics of movement and it is the mental refinement of our conceptions of such order as well as its intensity that provide us with the freedom of movement. While the mental schema of the movement is initially required in a conscious effort to learn and establish any particular movement, practise and use transposes the schema into the sub-conscious were it runs off automatically and at the command of the musical impulse.

"In this process we experience high spiritual freedom and immediate command of the technical realm, we can turn towards the tasks of art without hindrance, without having to explain every tactile- or tensile perception or every partial movement or rotation of a joint when playing the instrument. Thus soul and performance are unified."[32]

## *Relevance and significance*

Steinhausen's analysis of movement in violin playing focuses predominantly on bowing and bow technique. He articulates specific principles which notwithstanding critical corrections and clarifications still inform much of our thinking about bowing and bow technique to date and have been confirmed and articulated by others following him. In particular Steinhausen recognises that the "mechanism of bowing action is a complex system of levers with multiple turning points."[33] Included in this system of levers is the bow hand itself. Steinhausen identifies the "turning bow hold" (*Griffwechsel*) as crucial for appropriate arm movements and supported by a rotating forearm which effects supination and pronation of the bow hand. He argues against a view articulated by Courvoisier at the time who schematised bowing movement to include an immovable bow hold and a flexible wrist. Steinhausen makes clear that his famous argument against the Joachim School is simply taking issue with the dissonance between practice and theory that such a view entailed: Courvoisier's conception simply did not reflect the way distinguished violinists played at the time. In the face of this, Steinhausen argues for a description which captures the prevailing reality. Subsequent theory has vindicated Steinhausen's position and committed Courvoisier to history.

However, Steinhausen's significance and relevance goes further than his famous conceptualisation of bow mechanics, his conceptualisation of the turning bow hand or his distinction between active and passive muscle groups (summarized in his

[31] Steinhausen 1920, 39
[32] Ibid, 49
[33] Ibid, 71

famous dictum that the bow arm leads while the hand follows). Steinhausen's importance rests with a paradigm shift from a single-minded concern for the mechanics of movement towards a dualistic conception seeking to understand the dynamic – and psycho-physical unity of movement in violin playing in general. In particular this shift is characterised by the emphasis that movement patterns are most effectively acquired through mental and active attention. This attention is, however, directed at the energetic properties of movement and more importantly at a particular phase of the movement: its "letting go" or recovery phase. Without such a "letting go", movement may lose its natural, swinging and free characteristics. Notwithstanding that not all movements actually are subject to visible or audible energetic thrusts, it is the conception of movement in the abstract notion of swing which leads to the identification of energetic variation in the movement and ensures its freedom. Despite this initially theoretical conception, the "letting go" phase of the movement is directly accessible to our proprioception.

Steinhausen's understanding has far-reaching consequences for our practice and learning. It does away with purely mechanical or gymnastic practice as Steinhausen emphasises repeatedly and directly. It identifies as the principal aim of practice the promotion of attention and in particular rhythmic attention as our consciousness builds mental patterns of the energetic profile of movements (including their essential "letting-go" phase).

"Learning movement means to acquire mental capacities; to "be in command" of a movement means to possess the correct blueprint, the mental excitation map (*Hirnerregungsbild*). This possession is the result of practice.... the schema of the movement acquires and order. Accordingly the feeling of control of the movement, the unity of will and ability... in this process we are granted high mental freedom and immediate command of technique.... soul and performance are unified (*So wird Seele und Spiel zur Einheit*)."[34]

Violin practice unfolds as the collaboration between attention to aural image, sounding reality and proprioception or kinaesthetic sense (*Muskelgefühl*). Steinhausen's view implies that technical improvement is achieved through temporal organisation or predominantly rhythmic practice attending to the fluid coordination of movement in which we attend to the release of the movement impulse. In practice our attention seeks a minimisation of effort and inhibition of unnecessary action. This is accomplished as much by attention to the silence between the notes than by attention on the energetic property of any movement itself. The aim of violin practice is then essentially the identification and instant achievement of rest or recovery at any required time. This rhythmic flexibility and direction is no longer a purely physical or technical achievement. It in fact articulates a unity between mental and physical realities and reflects a way in which "soul and play" become a unity: Idea of sound, mental innervations map, gesture, bow movement, sounding reality "are the different sides of one and the same

[34] Ibid, 46-49

thoroughly unified psychological process"[35]. The result of this view of violin playing is a unification of the realms of music and technique not after the technical has been conquered but while the freedom of play is refined.

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[35] Ibid, 123