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Main subject: Violoncello

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Title of research:

Exploring the space within intervals, an approach of different ways of shifting on cello

Research question:

How can I enhance accuracy of my shifts and use the different ways of shifting to serve my musical interpretation?

Summary of results:

After listing the different ways of shifting and looking for direct applications in the repertoire, my goal was to enhance the accuracy of my shifts. Looking for different approaches in order to raise accuracy brought me to three different conceptions about practicing. The first approach refers to having a clear idea of the body movement required to achieve the different types of position change. However, according to recent studies, this approach using an internal focus (focus directed to the movement itself) tends to be less effective than using an external focus (focus directed to the effect of the movement on the environment). Therefore the second approach consists in anticipating the sound as an external focus as well as developing the geography of the instrument. Nevertheless, anticipating the sounds and knowing where sounds are located on the instrument does not include a musical context. Consequently the last approaches are related to the goal conception as well as the practice of the musical intention. My main conclusion is that musical intention should be the main concern of the artist in his practice, looking for his own voice. Besides new ways of practice clarifying the goal conception enables the development of awareness of musical intention, and helps to have a better idea of what method to use in order to reach the goal. The last approaches motivated by the musical intention should encourage teachers to use instructions inducing an external focus in order to help the student to find his own voice in music.

Biography:

Alexis Bove, born in Paris in 1987, started to play the cello at the age of four with Marie-Claude Douvrain. At 13 he entered the regional conservatoire of Saint-Maur, France, in the class of Christophe Oudin where he got first prize in cello and in chamber music with J-F Ballèvre and Thierry Brodard. At the same time, 2005, he joined the “Naïri” string orchestra, conducted by Haïk Davtian as full time cellist with who he played during 5 years performing Armenian folk music as well as traditional classical repertoire for Chamber orchestra. In 2010 he entered the class of Michel Strauss and Jan-Ype Nota at the Royal conservatoire of The Hague, in The Netherlands, where he is receiving his Master degree. Besides his studies, Alexis took part in master classes with Marc Coppey (academy of Nice), Henri Demarquette and Peter Croppers (academy Maurice Ravel), Amy Flamers and Michel Michalakakos (Biarritz academy), Philippe Graffin, Harro Ruijsenaars, Jean-Bernard Pommier, and Marie-Paul Milone. In 2014, he participated in the European Impro master-classes with eminent musician Ernst Reijseger, Anton Pet, Karst de Jong, Vincent Le Quang, and Hervé Sellin.

Exploring the space within intervals

An approach of different ways of shifting on cello

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Introduction

This research paper is a study of the different ways of shifting on cello and how to enhance their accuracy. I wanted to focus on a particular aspect of the cello technique, which can be useful for me as well as for my colleagues. As a result of the wide sounding range of the cello (the widest range of the string instruments), shifting represents a fundamental aspect of performing on cello, and a necessary requirement in order to enjoy this wonderful instrument to the limits of its capacities. Basically, a shift implies a change of position of the left hand to reach a new pitch. The purpose of the shift is to connect two sounds/notes. The problem of position change occupies a special place in string technique because its solution determines the ability to achieve the correct pitch and interval, to play in tune and to be able to have the facility to play fast passages.

My goal consists in listing the different possibilities to realize a shift and how to use those effects for my interpretation. Also, my objective is to design a method based on new ways of teaching and on my personal experience in order to raise accuracy of the shifts.

In the first chapter, I have listed and described the different ways of shifting and looked for direct application within the repertoire. Chapter two looks at ways of practicing that can help the development of secure and accurate shifting, and Chapter three is dedicated to designing a method of practice, based on the knowledge outlined in the first two chapters and on my experience as a performer and teacher. In this chapter, I have brought together different ways of practice to sharpen the goal conception and musical intention in order to develop an effective and efficient practice method.



Chapter I

Different ways of shifting on cello

At first, it is important to consider that a position change implies a coordination of the two hands. Indeed a shift takes a certain amount of time and we must be aware of this time since it has no rhythmic value on its own. The rhythmic construction of a musical sentence is based on the start of the tones. Therefore we must execute the position change before the beat in order not to disturb the rhythm. The change of position must occur before the new tone and it can take as much time from the preceding tone as needed in order to finish on the rhythmic stress of the new tone.¹

1.1 Anticipated shift

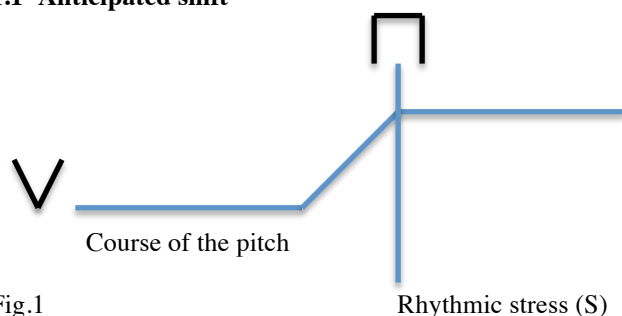


Fig.1

This type of shift starts on the preceding bow (old bow), and continues with the bow change (new bow) and the new tone coincides with the rhythmic stress as shown on the graphic representation above (fig.1). The advantage of this shift is that it allows hiding the position change between the old and new bow. As a result, the rhythmical dimension of the melody is not disturbed. This technique is the most frequently used for a position change while it is needed to keep the musical line pure of any accidental glissando. Therefore, in term of aesthetic convention this type of shift is very convenient within the whole repertoire both for slow or fast pieces.

1.2 Anticipated-articulated shift

The articulated shift implies an intermediate step from the left hand, using a referent finger between two positions and, when the new position is reached the next finger to play drops in place only on arrival.



Example 1²

In the example 1, bar 36 we can use an articulated shift from b to f#. If we consider the following fingering: first finger playing the b and third finger playing the f#, then the articulated shift consists of shifting on the first finger from b to the intermediate note d to finally drop the third finger to play the

¹ Mantel, p. 51.

² Joseph Haydn, *Violoncello concerto in D major, Hob.VIIb :2*. Ed. G. Henle Verlag, Munich, 1st movement bar 35-37

f#. This way of shifting using an intermediate finger reinforces the feeling of positions of the left hand. Moreover this technique can be realized together with the anticipated shift but also within one bow (example 2) and will support the position change to raise its accuracy and keep the musical line free of any disturbance.



Example 2³

In the example 2 (first bar), if we consider the following fingering: the first finger is playing b and fourth finger g, the articulated shift will consist of shifting from b to the intermediate note e with the first finger and then drop the fourth finger to play the g. It is important to mention that the articulated slide implies a connection between lower fingers to higher ones.⁴

1.3 Delayed shift

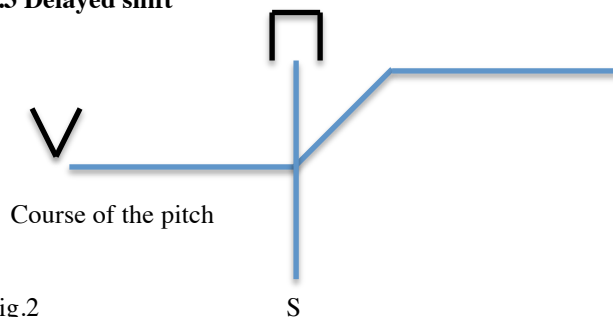


Fig.2

When the shift is delayed (fig.2), the shift and the bow change coincide with the rhythmic stress, so the new tone is more or less delayed. This type of shift should be carefully employed because of aesthetic reasons: the new tone will not coincide with the rhythmic stress and it could produce unwanted effects and disturb the musical line.⁵ The delayed shift was very present in the playing of great cellists of the 20th century such as Maurice Gendron, Janos Starker and Paul Tortelier but can be considered nowadays as old fashioned.

There is, however, another way to realize a delayed shift, which is more satisfying aesthetically (fig.3).

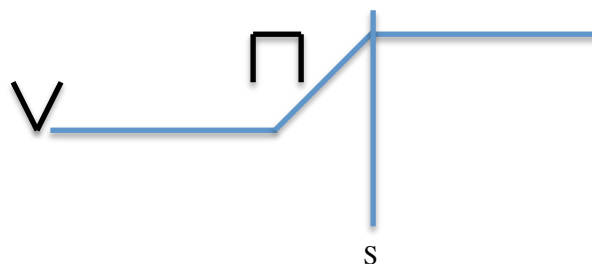


Fig.3

In figure 3, the shift will occur on the new bow and the new tone will coincide with the rhythmic stress.⁶ As a result, the melodic line will not be disturbed by any unwanted accent, but this way of shifting implies a quicker movement of the left hand in order to pick up the new tone and coincide with

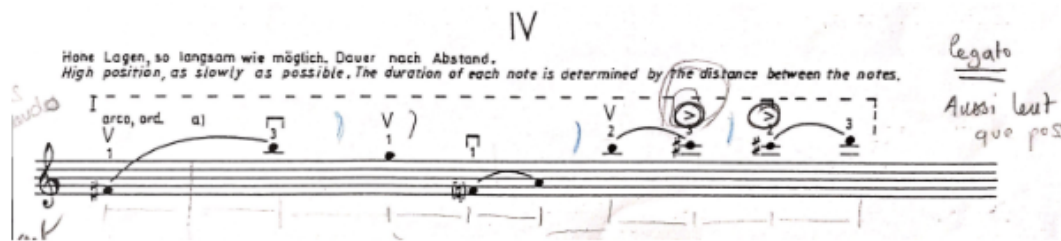
³ Anton Dvořák, *concerto for violoncello in B minor, op.104*. ed. N.Simrock, London-Hamburg. First movement

⁴ Starker, 2004. p. 149

⁵ Mantel,, p. 52

⁶ Mantel, p. 52

the rhythmical stress. Despite the high velocity required for the execution of this shift, it allows the connection of two tones whilst keeping the rhythmical structure and without undesirable accents.



Example 3⁷

In the *four short studies* by Bernd Alois Zimmermann, fourth movement (example 3) the additional instruction explains that the large intervallic skip should be performed without glissando but also without rest. Therefore the second possibility of delayed shift (figure 3) should be considered as the best way to perform this movement since it allows connecting these large intervals without any glissando.

1.4 Glissando

The glissando is a way of shifting, which emphasizing the slide from one note to another.



Example 4⁸

This excerpt from the cello concerto *tout un monde lointain* by Henri Dutilleux (example 4), is a passage showing a constant slide between the tones (glissando). This way of shifting implies a continual motion of the left hand while sustaining and supporting the glissando with the bow. Furthermore the melody and its rhythmical structure can be stressed by the bow accentuating the beginning of the tones.

1.5 Left hand staccato



Example 5⁹

⁷ Bernd Alois Zimmermann, *four short studies for violoncello solo*. ed. Breitkopf & Härtel, BG 959. Fourth movement

⁸ Henri Dutilleux, *tout un monde lointain*, pour violoncelle et orchestre. ed. Hengel & Cie, Paris. HE 33633. First movement

⁹ Serge Prokofieff, *sinfonia concertante*, op.125. ed. Boosey & Hawkes, London. B.&H.19456. First movement

The staccato (from the Italian *staccare*: to detach) is characterized by performance in which the notes are shortened, detached and abruptly disconnected.¹⁰

The Staccato is usually found in the repertoire as a bow stroke but it is also possible to find it as a left hand effect (example 5). The left hand staccato consists in a fast sequence of shifting within one bow in which the notes are sharply detached.

1.6 Additional parameters

The following list is a summary of additional parameters accumulated from various teachers and is relevant in order to achieve a position change:

- Before shifting it is essential to anticipate the distance of the position change with the elbow. The elbow anticipation is necessary to preserve the uninterrupted descending line of the arm while traveling on the fingerboard.¹¹
- It is also important to consider the position of the fingers on the string: slanted backward or slanted forward. The slanted backward position is preferably used for shifting on the same finger or shifting from higher finger to lower finger. The slanted forward position of the left hand is generally employed for an articulated shift (connecting a lower finger to higher one).
- Another important aspect while shifting refers to finger pressure on the fingerboard. The finger pressure on the string should be reduced while travelling from one position to another in order to avoid any tension in the hand.¹²
- Because of the time needed to realize a position change, the bow distribution should not be neglected. In other words, it is important to anticipate the amount of bow used while shifting.
- Another principle is that for aesthetic reasons we should not shift immediately after a shift has taken place because it would disturb the musical line.
- When shifting during a slur and connecting the same fingers, it is preferable to shift on semi-tones in order to avoid glissando.

Chapter 1 has collected and described the different ways of shifting; this approach is focusing on directing the body movements consciously and analyzing and deconstructing the movements involved. This approach can be ineffective if the performer is not able to hear the sound before producing it and locating it on his instrument. This type of focus is called “internal focus” and refers to a focus based on the movement itself.¹³ Chapter 2 is concerned with practicing ear training in order to anticipate the sound before producing it (an external focus of attention), and then developing the knowledge of the geography of the instrument through the exercise book of Janos Starker.

¹⁰ *Staccato*.dictionary.com.dictionary.com *Unabridged*. Random House, Inc.
<http://www.dictionary.reference.com/browse/staccato> (accessed: February 26, 2016).

¹¹ Starker, 2004 p. 144

¹² Starker, 2004 p. 150

¹³ Wulf & Mornell

Chapter II

Raising accuracy

“It ought to be taken for granted that all the aspects of instrumental playing must be motivated by musical intentions”¹⁴

2.1 Hearing the intervals

During my years of study at the Regional Conservatoire of Saint-Maur-des-fossés in France, I had the chance to meet Didier Courty who was subsequently my theory teacher for four years. He placed great importance on intonation practice in his teaching. His practice book *intonations*, is particularly well designed to raise the accuracy of inner hearing and enables the player to be familiar with all types of intervals.



Example 6¹⁵

The practice book *intonations*, written by Didier Courty (example 6) is designed to be practiced without the instrument. It should be practiced using a tuning fork as a reference and singing or imagining the tones. Example 6 is an exercise on a minor seventh, but is not only constituted by minor seventh intervals but also augmented fourths, major thirds, minor seconds, major seconds...

The working interval is mixed with other intervals in order not to accustom the ear with automation and to remain faithful to the musical repertoire that does not contain only the same intervals.

I found those exercises very effective in addition to my daily instrument practice; it helped me to raise the accuracy of my inner hearing and therefore it enhanced the accuracy of my shifts. This is due to the fact that it is essential to hear (imagine) the tone in order to accurately produce it.

2.2 Geography of the cello

“Since the frets of yesteryear are preserved only on the guitar,
we should aim at developing a mental and physical keyboard on the finger board.”¹⁶

In addition to healthy ear training, shifting requires a good knowledge of the positions on the instrument since there are only few landmarks on the fingerboard.

¹⁴ Starker, p. 136

¹⁵ Didier Courty, *intonations*. 1997-2000

¹⁶ Starker, p. 147

According to Janos Starker, the placement of the first finger defines a position and there are three types of positions on the cello: the four-finger position, the three-finger position and the thumb position. Taking into account the chromatic scale, there are eight four-finger positions, four three-finger positions, and twelve standard thumb positions.¹⁷

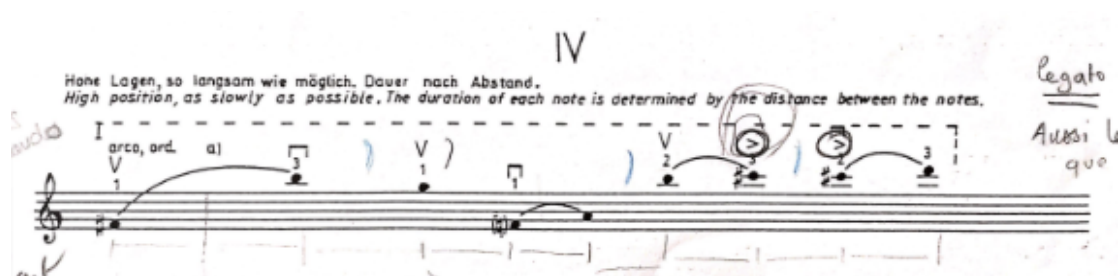
The numbering of the positions according to the chromatic scale enables the player to memorize and visualize the fingerboard, and therefore, it represents a security in addition to the inner ear when shifting. Thus, we don't aim for a note in itself but for the position in which this note takes place. This is the reason why I highly recommend working with the method of Janos Starker¹⁸, which is designed to practice all the possible connections between the positions.

Practicing with this method considerably enhanced the accuracy of my shifts because it helped me to develop a clear visualization of the fingerboard as well as memorizing the distances between the positions.

Consequently, it is crucial to hear the interval before playing it on the instrument, but then we also need to know where the notes are located on the fingerboard, thus Janos Starker's practice book is very effective to know the geography of the violoncello.

2.3 The median technique for large intervals

Most of the time, large intervals can represent a difficulty for the performer because they are difficult to hear.



Example 7¹⁹

In example 7, the large range of the intervals that compose the melody can be difficult to hear. Therefore the intervals can be reduced using a median pitch, in order to make them easier to hear (example 8).



Example 8

In example 8, the intervals are reduced referring to the median note A. As a result, the intervals are now easier to hear and to sing. Once the intervals become familiar, the next step is to imagine the real intervals (example 7) while singing the median version of the melody (example 8). Finally, the last step is to practice on the instrument the original melody while imagining the reduced version.

Over the years, I have found this way of practicing the large intervals very beneficial because it gives quicker result in term of intonation and it enables to memorize the distance on the fingerboard as well as enhancing accuracy of the shifts themselves. This method is of great benefit when sight reading contemporary music, which is often full of large intervals.

¹⁷ Starker, 2004 p. 147

¹⁸ Starker, 1965

¹⁹ Bernd Alois Zimmermann, *four short studies for violoncello solo*. ed. Breitkopf & Härtel, BG 959. Fourth movement

2.4 Meeting with Rachael Beesley

In order to inquire further into how to achieve shifting on stringed instruments, a lesson and interview with Rachael Beesley was arranged. Rachael Beesley is an eminent violinist and teacher who also is involved with teaching courses on practice methods and performance training. During our meeting, she shared with the researcher the way she practices shifts. Basically, her approach of shifting uses an intermediate finger as mentioned in the anticipated-articulated shift. This approach helps her to secure the position change by knowing in which position new tone is located. This approach of shifting using an intermediate finger is similar to the position change mentioned by Janos Starker in his book. Although Rachael mentioned only one of the effects possible that are listed in chapter one for achieving a shift she also explained how she practices the anticipated-articulated shift.

When she practices a shift, she allows the slide to be audible in the old bow as a scaffold in order to get use to the distance on the fingerboard. When the ears and the body are accustomed to the shift, the scaffold can be removed. Further, in order to feel the distance within an interval she plays the notes of the respective scale within the interval. Consequently, playing the notes included in an interval enables also to improve intonation because it refers to the type of scale used in a particular passage of a piece. Because string players tend to hold their breath while realizing complex motor skills as shifting, singing with the instrument during a shift enables breathing to remain natural. Furthermore, singing while practicing helps to improve intonation and motor skills. In addition, Rachael Beesley suggests practicing a shift both ways, ascending and descending in order to enhance the feeling of the distance on the fingerboard and to accustom the ear to the interval.

Chapter two describes how ear training can facilitate familiarity with all kinds of intervals, as well as improving the knowledge of the geography of the instrument in order to locate the sounds on the fingerboard. These two aspects, as well as the aspects of instrumental playing mentioned previously need to be included in a wider context and a more external focus of attention: the musical intention. Because music is a language, and not only a sequence of sounds, the performer must be able to convey the emotions and the meaning of the music he is performing. Therefore chapter three focuses on practice approaches, which emphasize the musical intention.

Chapter III

Practice approaches

3.1 Clarifying the goal

When practicing it is crucial to keep the focus on the intended musical goal, rather than practicing with the idea that a musical passage will be successful after a series of mechanical repetitions. Mindless repetition can result in a rendition that is automatic but not necessarily musically ‘alive’.

“If a central idea is lacking in his practicing the player will make no progress and may actually do damage [...]”²⁰

Getting closer to the musical concept should motivate the repetition of a musical passage, therefore imagination should be constantly engaged and the musical idea should not be fixed but opened to explore and improve the interpretation. A good technique is only efficient if serving a musical idea because music is like a language in that it is saying/expressing something. Consequently the technical solutions should serve the intended musical goal.

However as a student, I observed that my teachers often directed my attention to technical details in order to improve a musical passage without explaining to me the musical concept behind it or without ensuring that I had a musical idea of how should the passage should sound. When practicing at home after a lesson, my focus was devoted to improving those technical issues but they were not connected to a personal musical idea. As a result I noticed that my playing and performing became automatic and I was not really aware of what music was saying to me, rather I was trying to reproduce the musical ideas of my teacher and focusing essentially on his own technical solutions. Thus this process of imitation was not motivated by my own musical conception and, as a result, was not effective. Consequently I was trying to please my teacher even though I was not convinced myself with the musical idea and this was overriding my own authentic musical intention.

A performer should practice with a clear conception of what he wants to express on the instrument. In order to sharpen this goal conception it is important for the musician to determine clearly what could be improved and what is desired before playing a passage again. Singing with or without the instrument can be a very natural and effective way to sharpen the goal conception. When it is not clear which kind of shifting should be used on a certain passage, singing will provide clues and answers and help to make an appropriate artistic choice.

“For maximally effective practice, learners must set goals to identify the specific skills and behavior that they want to achieve and to have a reference point for assessing progress”²¹

Scientific studies have demonstrated the importance of setting goals. Working with appropriate goals, contributes to learning, achievement and success. In order to improve a performance, goals need to be:

- Challenging: this encourages improvement by keeping the mind alert and interested
- Attainable: achievable given the conditions
- Realistic: based on the musician’s prior performances
- Specific: measurable; making it possible to know when to stop practicing something and when a goal is achieved.

Besides the conditions “CARS” mentioned above, there are three types of goals: outcome goals (winning a competition, audition), performance goals when improving your past performance (for example more accuracy, more expressive), or process goals when emphasizing particular aspects of skill execution (for example controlled breathing, bow movement). Goals are an essential aspect of effective practice because you can tell if you have reached something, you know when to stop practicing a passage, you have a better idea of what method to use and you are forced to develop awareness of what you want to hear.

In addition, planning the goals helps to make a practice session more efficient. However it is important to know that goals are highly individual and can change during a preparation phase.²²

²⁰ Gerhard Mantel, introduction xiv

²¹ Schmidt & Wrisberg, *motor learning and performance*. Human Kynetics, 2008

²² From Susan Williams’ KC elective ‘Flow: experiencing optimal performance’

Two useful practice methods, which are alternatives to simple repetition are: random practice and varied practice. Random practice involves playing fragments of a piece in a random order, thus enabling the player to stay alert and engaged and deeper learning. Varied practice involves playing a section of music in several different ways.

3.2 Practicing the musical intention

Recent studies reveal that in musical practice, “[...] teachers tend to give instructions that refer to the performer’s body movements.”²³ For example a cellist would be told to anticipate a shift lifting the elbow. However, those studies have shown that directing the attention of a student to his own body movement (internal focus) was ineffective. On the other hand “[...] adopting an “external focus”, or directing attention to the effects that one’s movements have on the environment – such as the apparatus, implement, or instrument – generally results in more effective performance and learning.”²⁴ According to the results of these studies, it appears to be more beneficial to focus on the effect of the movement on the environment. Considering musical intention as the environment, the following list mentions some approaches accumulated from various teachers and colleagues that I find relevant to practice the musical intention:

- Practice with different moods
- Mime the character of the music without the instrument
- Practice on the general score to get a wider knowledge of the piece
- Be in the sound before playing it
- Analyze the structure of the piece

Furthermore, the practice of the musical intention aims to help the performer to develop its own interpretation because it enables an intimate relation with the music.

After discussions with Susan Williams, who teaches courses in practice methods and performance preparation at the Royal Conservatoire, I was able to connect these insights with recent scientific knowledge about attentional focus and goal setting, as well as the benefits of approaching music-making in a holistic way, by embracing the concept of music as a language.

²³ Wulf & Mornell

²⁴ Wulf & Mornell p. 88

Conclusions

This research has led me to look at practicing and performance preparation from different angles: from the analysis of movement, through the conception of sound, and finally to the musical conception. My focus was first directed to investigating the different ways of shifting on the cello as well as analyzing the respective movements required to achieve an effect. However, it became clear that it is essential to be able to hear the interval and be able to locate the notes on the instrument before achieving a shift in order to improve accuracy. In addition, recent studies have demonstrated the effectiveness of using an external focus rather than using an internal focus. In short: both good ear training and good knowledge of the geography of the instrument are essential to the performer if he wants to master his instrument.

However, movement analysis, training of the ear, and the knowledge of the geography of the instrument are not enough if not motivated by musical intentions. Thus, all the aspects of instrumental playing must be led by musical intentions. The progressions from chapters 1 to 3 describe a search for more authenticity and depth. Because music is language, the performer must look for his own voice and I found the practice approaches mentioned in chapter three very relevant to my own practice. I have also found setting goals, and planning the practice sessions very beneficial in order to save time and serve the musical interpretation.

As a teacher, I suggest to explore the approach consisting in directing one's focus on the effect of the movement on the environment (external focus) rather than directing the focus on the movement itself. Moreover I encourage exploring the intellectual context of the music, by enlarging the knowledge of a musical piece as whole and feeding the musical interpretation with other arts. As a result, the performer will reinforce his relationship with the music and develop his own voice. Also, finding one's own voice helps the fingers to know where to go, whereas the other way round does not work.

In this research, I brought together different approaches to enhance a particular aspect of the cello technique, leading me to enlarge my focus on considering music as a language, so that musical intentions and authenticity remain the main motivations to improve any aspect of instrumental playing in order to let the instrument become an extension of myself.

“Man, sometimes it takes you a while to sound like yourself.” Miles Davis

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