

ANALYSIS OF UNCOMPILED EXTENDED VIOLIN TECHNIQUES WITH DIDACTIC
MUSICAL AND AUDIOVISUAL EXAMPLES

by

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(Under the Direction of Levon Ambartsumian and Adrian Childs)

ABSTRACT

This dissertation is a guide for learning extended violin techniques that have not been extensively regarded in academic studies until now. The profound changes and additions to the sound palette of the violin in the twentieth century (often with techniques that oppose a classical approach to the instrument) has made necessary the study and compilation of the contemporary techniques not taught by traditional methods. However, even though studies and methods on extended techniques already exist, there are considerable gaps and weaknesses in them. Thus, the present text has been developed as a step towards compensating for a few of the gaps, such as: the limitation to European and North American concert music repertoire; the lack of pedagogical approach; and the lack of audiovisual resources. As a result, this study brings detailed overview with didactic comment, practice exercises, and video demonstrations of techniques found in Argentine tango, Brazilian concert music, North American folk music, and Salvatore Sciarrino's caprices. A set of experimental caprices has also been developed to explore those techniques mixed with other extended techniques more common in the repertoire. Although primarily conceived as a guide for violin performance and teaching, the text has been designed to be a useful resource for composers, conductors, and researchers interested in extended techniques.

INDEX WORDS: Extended violin techniques; Argentine tango; Piazzolla; Brazilian music;
Guerra-Peixe; Marcílio Onofre; North American folk; bow chops;
Salvatore Sciarrino; caprices; experimental; minor third harmonics.

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A Dissertation Submitted to the Graduate Faculty of The University of Georgia in Partial
Fulfillment of the Requirements for the Degree

DOCTOR OF MUSICAL ARTS

ATHENS, GEORGIA

2018

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May 2018

DEDICATION

To everyone with an open mind.

ACKNOWLEDGEMENTS

Thank you, every worker at any level of this institution, everybody who pays taxes or somehow helps financing public education in this country, and everybody who works in favor of diversity and cultural exchange here as well. And thank you, everybody who has given me personally some constructive influence or inspiration.

I thank you, my committee members: chair professor Levon Ambartsumian, who in the first place helped providing the opportunity of pursuing a doctor's degree at UGA and has been a reliable adviser outside musical matters too; Dr. Milton Masciadri, whose work promoting UGA worldwide is part of the reason I am here as well; Dr. Emily Gertsch, whose passion and professionalism as a musician and professor is an inspiration, and who has always shown willingness to help during this process; and Dr. Adrian Childs, who accepted the task of co-chair embracing this project, participating closely, and encouraging me at every step of my research.

I recognize too the importance and help of all my colleagues, friends, and family, especially my parents Maria de Lourdes and José, and my sister, Marília, more experienced people who are true believers in my potential and have also been important counselors during my studies. Finally, I would not be even close from what I am now without the support I received from my best friend, colleague, double bassist, professor, adviser, and partner, my dear Cláudia Amaral.

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CHAPTER 1

INTRODUCTION

The violin and its performance practice have evolved greatly since their origins. Thanks to the work of the excellent composers, performers, and makers of the Baroque period, this instrument gained importance and standardization during those decades. It was already commonly regarded as a noble instrument during the Classical period and, with the innovations to its construction and especially the development of the modern bow in the nineteenth century, composers and performers of the Romantic era made this instrument sound as it never could before. The twentieth century brought even more expansion, not so much regarding its construction and setup (although it was when metal strings became standard), but mostly because of the avant-garde trends which demanded a new type of expressivity from the violin. Odd techniques such as *col legno*, *sul ponticello*, and Bartók pizzicato have been almost systematically incorporated into the repertoire since the last century,¹ and even more changes as a result of preparation, amplification, and other electronic resources have been possible. This constant evolution of performance practices and the certainty that it has not ended brings us the pertinent question about how violin teaching has adapted with the inclusion of new techniques.

Often referred to as “uncommon,” “awkward,” or even “unnatural” and “harmful,” the so-called “contemporary” or “extended techniques” form a complex subject that can be

¹Those techniques might be in fact older than the violin itself, some of them being traced back to the repertoire for viols in the seventeenth century, but, except for sporadic usage, such techniques were omitted from most standard violin repertoire for centuries.

controversial and difficult to delimit. However, much of the repertoire recently written (and probably pieces that are yet to be composed) seek those playing effects which can put classically trained performers out of their comfort zone, and inspire performers and pedagogues to develop texts specifically devoted to such techniques. But even those might be fated to become mainstream, leading to another question: are there interesting techniques and performance practices that have not yet been deeply studied?

Briefly: yes, and a reason for that (at least considering the most accessible English language academic studies on extended techniques) is the almost exclusive focus on European and North American repertoire in violin scholarly studies about contemporary techniques. Other shortcomings of such studies include the lack of pedagogical approach and visual or audiovisual aids. With the goal of filling some of these gaps, this study has focused on three areas: 1) repertoire and playing traditions from outside Europe and North America, especially the Argentine tango and modern Brazilian concert music; 2) folk traditions from the United States; and 3) caprices by Salvatore Sciarrino. This last one, despite being written by a well-known contemporary European composer, is included because of the absence of didactic tools to help understanding his use of harmonics.

The next stage of this research was to select specific techniques and construct a methodic overview, explaining how to perform them and bring a bit of the context from where they are found. However, this document has gone even further, proposing their use in other contexts and even experimenting with new approaches to them, thus expanding even more the possibilities of the violin. Practice exercises have been developed, as well as experimental caprices incorporating those techniques and others. In order to be consistent with a criticism I have

addressed with most studies in this field, this document also brings a rich quantity of illustrative pictures and also some video examples.

Considering the rare usage of the techniques studied here in concert music, this document is probably something beyond the entry level of the academic study of unusual string sonorities. Yet the text has been made as accessible and descriptive as possible, appealing to a wide audience. On the other hand, since some of the playing effects studied here are “native” to popular traditions like tango and bluegrass, for experts in such genres some part of this document will probably read like an introductory text. However, the discussion of those techniques is comprehensive and includes new explorations. It is also worth mentioning that although this document is essentially focused on violin performance and teaching, it is also a reliable resource for composers and conductors to understand and wisely work with extended violin techniques.

Literature Review

Extended Violin Techniques

Extended violin techniques nowadays are a common subject in violin teaching and performing. Even though the requirement of studying extended techniques may still not be set in stone for most violin curricula, it is almost a certainty that every violinist at the professional level will eventually experience this universe in their lives. The subject has also become a serious concern in academic studies, given that “the contemporary art of violin playing, in music written and performed since the mid-twentieth century, has seen a stunning development of new

techniques, new approaches to performance, and new technologies,”² in Brenda van der Merwe’s words. Katherine Tischhauser points out as well that “since the Second World War serialism, indeterminacy, pointillism, minimalism, and notational innovations have been the trend. As more radical compositional styles emerged, many nontraditional notations and techniques were formulated by composers to convey their musical ideas.”³ Patricia and Allen Strange do not hesitate to affirm that “contemporary performers and composers have so greatly expanded the performance techniques on their instruments that eighteenth- and nineteenth-century performance techniques now represent only a portion of an instrument’s sonic capabilities.”⁴

The didactic literature on extended technique is also emphatic about pointing out this gap. As van der Merwe writes,

Traditional pedagogical methods inherited primarily from the American, Franco-Belgian, and Russian violin schools, while they remain the foundation for the training of violinists in our conservatories and universities, are not by themselves sufficient for the training of the violinist of the twenty-first century. These traditional methods must be supplemented with contemporary, innovative pedagogical approaches to performance and training in the twenty-first century, for the mastery of contemporary violin repertoire.⁵

This concern is anything but new. In the 1980s, Kenneth Sarch wrote about how “Galamian, Menuhin, Bronstein, and Rolland have written important and detailed violin treatises recently, yet none of these deal in any depth with the new technical and rhythmical demands which contemporary composers call for in string music.”⁶ This critique can now be extended to

²Brenda van der Merwe, “New Frontiers in the Art of Violin Performance: The Contemporary Study and Pedagogy of Extended Performance Techniques for the Violin” (DMA diss., Boston University, 2005), 1. ProQuest 3191931.

³Katherine Jetter Tischhauser, “A Survey of the Use of Extended Techniques and Their Notations in Twentieth Century String Quartets Written since 1933 by American Composers with a Selected Annotated Bibliography and Discography” (DMA diss., Florida State University, 2002), 1. ProQuest 3374299.

⁴Patricia and Allen Strange, *The Contemporary Violin: Extended Performance Techniques* (Berkeley: University of California Press, 2001), xi.

⁵Van der Merwe, “New Frontiers in the Art of Violin Performance,” 1.

⁶Kenneth Lee Sarch, “The Twentieth Century Violin: A Treatise on Contemporary Violin Technique” (DMA diss., Boston University, 1982), 1. ProQuest 8220902.

Simon Fischer's excellent and thorough volume *The Violin Lesson* from 2013, as well as his other works on scales and technique in general. Not discarding the important value of these authors, one can still say that they are not complete for an instrumentalist who desires to perform modern music.

If some authors questioned the adequacy of traditional approaches to the contemporary violin teaching, Michael Buckles tried to bring into light some of the existing contributions to the field. He states that there is not a void in the literature, but rather in the knowledge about existing resources. In his words,

The void is to be found in the present state of violin literature research. Specifically lacking is the recognition that there appears to be a significant number of contemporary etude books to equip a violinist to successfully perform contemporary music.⁷

His work, "A Structured Content Analysis of Five Contemporary Etude Books for the Violin," analyzes technical aspects of supposedly didactic works for violin by Martinů, Ysaÿe, Hindemith, Cage, and Adler. As a conclusion, however, Buckles has found that while etudes by Martinů, Ysaÿe, Hindemith, and Adler cover metrical, rhythmic, tonal, and harmonic aspects of the contemporary playing very well, extended techniques per se are generally omitted.⁸ Also,

The use of non-traditional bowing, the incorporation of non-traditional pizzicato, the use of mutes, as well as the use of different kinds of mutes, and the coordination of theatrical effects, both percussive and vocal are missing from the five etude books examined for this study. The Cage *Freeman Etudes* incorporate the most technical variety, yet is accessible only [to] the most advanced player.⁹

On the other hand, most of the authors here quoted have given a different contribution to the extended technique compilation and study. Patricia and Allen Strange have presented an

⁷Michael Kim Buckles, "A Structured Content Analysis of Five Contemporary Etude Books for the Violin" (DMA diss., Louisiana State University and Agricultural & Mechanical College, 2003), xii. ProQuest 3134934.

⁸Buckles, "A Structured Content Analysis," 199-201.

⁹Buckles, "A Structured Content Analysis," 204.

exhaustive study in *The Contemporary Violin: Extended Performance Technique* (2001), with information and description of techniques applied to the repertoire of a myriad of composers divided into eight chapters, namely: “Bowing,” “The Fingers,” “Percussion Techniques,” “Harmonics,” “Tuning Systems,” “...and Variations,” “Amplification,” and “Midi, Strings, and the Computer.” This volume of encyclopedic proportions is perhaps the most profound study in the field and a reliable starting point for every investigation on extended violin techniques, but there is work yet to be done. Since it is a rather inclusive work, there is not a filter regarding the practicality of the unusual effects. It is, however, common knowledge that controversy is a constant when it comes to extended techniques. The violinist Michael Steinberg says that an “unsatisfactory aspect of the book is the absence of a clear explanation of the extent to which various techniques adversely affect the instrument. Some may render it unstable for the remainder of a performance while others may cause actual physical damage.”¹⁰

A relatively common issue in instrumental technique manuals is the lack of audiovisual aids. In the case of such an unusual approach to the instrument, as presented in *The Contemporary Violin*, this kind of support is even more important to more easily familiarize the reader with the unknown. Incorporating video or at least audio to a written work is not a simple task, but, as Steinberg relates, “Its [*The Contemporary Violin*’s] most egregious drawback is the insufficient illumination of the sonic landscape. An accompanying compact disc with aural examples would have served to make this book quite a bit more useful.”¹¹

Even though *The Contemporary Violin* brings good insights into how to perform most of the techniques, it is not completely thorough, nor does it present practice exercises or studies.

¹⁰Michael Steinberg, review of *The Contemporary Violin: Extended Performance Techniques*, by Patricia Strange and Allen Strange, *Notes* 2 (2002): 352. *JSTOR Journals*, EBSCOhost (accessed December 15, 2017).

¹¹Steinberg, review of *The Contemporary Violin: Extended Performance Techniques*.

Also, pictures and other images are scarcely used to illustrate how to perform the techniques, although it has plenty of musical examples. In fact, Steinberg says “this volume will be of interest to composers and musicologists (and to a more limited extent, performers).”¹²

Other scholars have also been compiling extended techniques in dissertations and theses. Kenneth Lee Sarch’s “The Twentieth Century Violin: A Treatise on Contemporary Violin Technique” (Boston University, 1982) is a great example and a model for the present study. Not only has Sarch compiled techniques from the repertoire, but he has also developed original studies for the practice of most of them. Katherine Tischhauser’s “A Survey of the Use of Extended Techniques and Their Notations in Twentieth Century String Quartets Written since 1933 by American Composers with a Selected Annotated Bibliography and Discography” (Florida State University, 2002) is another good source, particularly for its organization and the extensive compilation of notational devices. Brenda van der Merwe’s “New Frontiers in the Art of Violin Performance: The Contemporary Study and Pedagogy of Extended Performance Techniques for The Violin”¹³ (Boston University, 2005) brings an interesting discussion about extended techniques and a compendium of caprices developed by the author.

Some of the sources present a clear pedagogical approach like the development of etudes/caprices, but most of them, aside from offering a discography, do not incorporate pictures, audio, or video. Thus, an especially interesting volume is Irvine Arditti’s and Robert HP Platz’s *The Techniques of Violin Playing*, in which they have approached the subject of varied modern violin techniques as if the performer (Arditti) were advising the composer (Platz). A great

¹²Steinberg, review of *The Contemporary Violin: Extended Performance Techniques*.

¹³This one culminates with the development of a series of *études* and caprices using the investigated techniques.

addition to this work is a DVD that complements the book with the demonstration of many musical examples.

It is also possible to find useful information about extended techniques online with audiovisual examples on websites, blogs, and YouTube videos, such as “The Orchestra: A User’s Manual,” web pages by the violinists Dejana Sekulić and Alexander Targowski, or the composer Andrew Norman, all of which are also an inspiration for this work.¹⁴

Orchestration guides very often address extended techniques and give notation advice. Some of those, such as Samuel Adler’s *The Study of Orchestration* as well as Kent Kennan’s and Donald Grantham’s *The Technique of Orchestration*, are also considered in this work.

Argentine Tango

Some of the techniques that are the subject of this study are from the tradition of Argentine tango and a considerable number of sources already discuss them. For instance, in 2010, the violinist and founder of Quartet San Francisco Jeremy Cohen had already posted on YouTube tips for playing tango special effects.¹⁵ In August 12, 2016, violinist and director of the London Tango Orchestra Caroline Pearsall posted a YouTube video demonstrating twelve tango special techniques, titled “Tango Music Effects 1 (Efectos 1),” which was reproduced two days later as an article in *The Strad*. There are other online sources, but only a few were selected here because of their organization and comprehensiveness. The only accessible academic source on

¹⁴Andrew Hugill, “Violins: Extended Techniques” on *The Orchestra: A User’s Manual* website. http://andrewhugill.com/OrchestraManual/violin_extended.html.

Dejana Sekulić, *Dejana Sekulić* website. <http://dejanasekulic.com/>.

Alexander Targowski, *Extended Violin Techniques* website. <http://extendedtechniques.blogspot.com/>.

Andrew Norman, “Try techniques” on *Shaken not Stuttered* website. <http://www.shakennotstuttered.com/try-techniques/>.

¹⁵Jeremy Cohen, *Jeremy Cohen* YouTube channel. <https://www.youtube.com/user/violinjazz123>.

this topic is Alejandro Drago's Dissertation "Instrumental Tango Idioms in the Symphonic Works and Orchestral Arrangements of Astor Piazzolla. Performance and Notational Problems: A Conductor's Perspective." Another good source is Ramiro Gallo's book *El violín en el Tango: Método fundamental para aprender a tocar tango*, which includes two CDs and video demonstrations (some of them available on YouTube), but the author was unable to obtain a copy for evaluation.

Brazilian Concert Music

The music from my country of nationality is an obvious choice of source for finding new techniques. Aside from the inventiveness of Brazilian musicians in general, Brazilian scholars have also produced interesting studies of extended violin techniques from local composers. The violinist and scholar of Brazilian music and extended techniques Eliane Tokeshi is an important reference, particularly through the journal article "Extended Violin Technique and Guerra-Peixe's 'Variações Opcionais:' Reflection on Parameters for Musical Interpretation."¹⁶ The dissertations by Rodrigo de Almeida Eloy Lôbo, "Compositor e Intérprete: Reflexões Sobre Colaboração e Processo Criativo em Caminho Anacoluto II – quasi-Vanitas de Marcílio Onofre," and Vladimir Machado Rufino, "Styles and Extended Techniques in 6 Works for Violin from Paraíba since 1952," have also been helpful in the formation of the present work.

North American Folk

Although considerably well-known in the United States, techniques used in North American folk music are often not considered in extended techniques surveys. Much information

¹⁶Técnica Expandida para Violino e as Variações Opcionais de Guerra Peixe: Reflexão sobre Parâmetros para Interpretação Musical."

on the matter can be found online and this study seeks to provide a comprehensive synthesis of the most interesting sources directed to the classically trained musician. Sources on this topic include the following: Sally Hernandez's dissertation "Teaching Turtle Island Quartet Music: Selected String Orchestra Pieces for High School and College Musicians;" Casey Driessen's entertaining and extremely informative video lessons "Techniques and Skills with Casey Driessen, Series One: The Chop;" the cellist Suzanne Paul's website with detailed and classical-musician-friendly instructions, *Groove Cello.de*; and Paul Huppert's video lessons "THE CHOP - Latin Rhythm Techniques for Violin."

An Old-World Representative

The music of the Italian composer Salvatore Sciarrino, the only European included in the present document, is usually covered in many of the earlier mentioned extended techniques studies. However, the reviewed literature does not discuss deeply the matter of minor third harmonics, very often used in his caprices and of which this document has developed further explanation and practice advice.

CHAPTER 2

TANGO VIOLIN TECHNIQUES

An Introduction to Tango Violin Techniques

The special effects in tango style, or “*yeites de tango*,”¹⁷ have been employed in the Argentine genre for probably over a century, with recorded evidence of their usage dating from the 1920s in Julio De Caro’s Orchestra, for example, in the piece “*El Monito*” (1928).¹⁸ The violin percussive effects are commonly said to have been first used due to the lack of percussion instruments in tango ensembles. Those effects have been given attention in the music of Astor Piazzolla, who not only made wide use of them, but also made the Argentine style globally famous with the popularity of his work. Due to this world-wide appreciation, there is a vast amount of tango ensembles in different countries, as well as a great deal of new arrangements of Piazzolla’s music by important contemporary composers such as Sofia Gubaidulina and Leonid Desiatnikov. In addition, his violin music has been championed by top instrumentalists, including Gidon Kremer.

The so called *yeites*, or special effects, have also been diffused and studied by means of academic studies and in the World Wide Web. One can find advice on how to approach the

¹⁷*Yeite* is an Argentine slang term about whose origin and meaning there is little consensus. It might mean “occasion,” “issue,” “doubtful matter,” or even a scheme that benefits the person who runs it. “Among musicians it is used more often in plural to refer, in a general sense, to the special effects specific to tango style.” Drago, “Instrumental Tango Idioms,” 125.

¹⁸Alexandro Drago, “Instrumental Tango Idioms in the Symphonic Works and Orchestral Arrangements of Astor Piazzolla. Performance and Notational Problems: A Conductor's Perspective.” (DMA diss., University of Southern Mississippi, 2008), 125. ProQuest 3326702. This recording has been made available on YouTube at this link: <https://youtu.be/x-yEyRs3a8>.

instrument as a tango musician on websites and in videos available online. This diversification of sources also results in a change of interpretation of the style and the effects, which can lead to conflicting concepts. The present study, however, is not intended to focus much on the stylistic aspects and the “correct” (if any) manner to perform tango technique, but rather to expose those effects as interesting and innovative tools for universal violin practice, performance, and composition.

For some reason, the tango violin effects have not been included in the previous compilations of extended violin techniques surveyed in this document, nor are any of Piazzolla’s or other tango composers’ pieces mentioned. Perhaps this is because they may be considered from a style apart from “classical” or “academic” practice and therefore should solely “belong” to their original context. In the case of Piazzolla, a classically trained (although deeply immersed in the tradition of Argentine tango) composer and performer whose work has been greatly acclaimed for decades, the omission of his music from existing method books is quite puzzling.

If today we can hardly dissociate the tango effects from Piazzolla, it is essential to reiterate that he did not invent the *yeites*. Rather, he integrated them into his work, which has been regarded as the *nuevo tango*, a development of the style that incorporated several novelties and, consequently, raised controversy at the time in the 1950s. With his then newly formed octet (the *Octeto de Buenos Aires*, founded in 1955), Piazzolla diffused the ideas of such revolution through a manifesto interestingly called “*Decálogo*” (“Decalogue”), in which he explains the use of new instruments and effects.¹⁹ As Drago says, this explanation seemed necessary because

the *extent* and *manner* of use of these effects ... was so modern, so revolutionary, so different from anything done before him and so important to his innovative thrust, that they needed be explained (and, probably, justified) to the tango audiences on equal

¹⁹María Susana Azzi and Simon Collier, *Le Grand Tango: The Life and Music of Astor Piazzolla*. (New York: Oxford University Press, 2000), 58-59.

footing with the inclusion of the electric guitar (a sort of tango sacrilege for the traditional tango audience) and the “overall structure of the works with their modern trend.”²⁰

It becomes clear that, although concerned with the most conservative audience, Piazzolla seemed committed to his own voice and the innovations that were necessary to let it speak.

During the following decades, Piazzolla worked with many violinists who have set the standards for the execution of the violin effects in the new tango context, among them Antonio Agri and Fernando Suárez Paz. With time, Piazzolla also employed those violin effects in other types of compositions outside the tango, for instance in “Luna a Luna,” a piece from the soundtrack of the Brazilian movie “*A Intrusa*” (“The Intruder”) from 1979, suggesting there a more “universal” usage of the tango violin techniques.²¹

It is worth mentioning that this section is not a strict study on traditional tango idioms as there are other works that deal with this more specifically. Although contextualized examples for practice and performance of some tango violin effects are provided, the principal idea is to broaden horizons for the violin sonority beyond any traditions.

Playing behind the bridge: *lija* or *chicharra*

Playing behind the bridge is a fairly common technique in avant-garde music. Much explored by Krzysztof Penderecki, George Crumb, and many others, all the accessed extended violin technique compilations mention it in some way,²² but not specifically as in the tango technique so characteristic in Piazzolla’s work. Strange and Strange discuss four characteristics

²⁰Drago, “Instrumental Tango Idioms,” 127.

²¹Audio available here: <https://youtu.be/S3uM6BzV9WM>.

²²Penderecki, for instance, is often noted for his use of behind the bridge with regular bowing, pizzicato, legno batuto, and even on the tailpiece in his famous work *Threnody for the Victims of Hiroshima* (1960).

of the “behind the bridge” technique (most commonly referred by them as “sub ponticello”),²³ briefly: its non-determinant pitch produced; the unique tone clusters that can be produced by a group of violins playing it at the same time; its noise band more centered that adds a very strong coloration to the pitch; and the freedom it gives to the left hand, making it possible to employ other effects with this hand at the same time.²⁴ They also provide a quotation from Tracy Silverman’s explanation about multiphonics that vaguely mentions a tango violin “scratch by playing behind the bridge.”²⁵ Tischhauser mentions eleven different notations for the use of this sounding point, some including articulation effects like ricochet, or even arpeggios or chords.²⁶ Van der Merwe does not comment so much on playing behind the bridge, but includes it in her *étude* named “Timbre.”²⁷

The descriptions that get closer to a definition of the tango technique, although not detailed enough, are found in the volume by Arditti and Platz, as well as Sarch’s dissertation. Arditti and Platz say that the composer Helmut Lachenmann “is very fond of the sound of bowing on the other side of the bridge on the string binding. On the violin, it works on the bottom three strings, but not the E string. A shrill ‘refined’ scratching sound is meant to be achieved.”²⁸ Sarch writes, “if more surface noise and a less clear tone is desired, then playing closer to the bridge is necessary. When firm pressure is applied with slow bow speed, a scraping, grating sound will result.”²⁹

²³It is not clear why they use the term “sub ponticello,” since on the violin one does not play “under” the bridge. It could make sense in the case of a violoncello or a double bass, but hardly for violin or viola. No other occurrence of “sub ponticello” was found within the selected scholarly literature. Tischhauser describes behind the bridge as “*dietro il pont*,” the Italian literal translation of “behind the bridge”. (Tischhauser, “A Survey of the Use of Extended Techniques,” 31.)

²⁴Strange and Strange, *The Contemporary Violin*, 13-14.

²⁵Strange and Strange, *The Contemporary Violin*, 132.

²⁶Tischhauser, “A Survey of the Use of Extended Techniques,” 30-31.

²⁷Van der Merwe, “New Frontiers in the Art of Violin Performance,” 171.

²⁸Irvine Arditti and Robert HP Platz, *The Techniques of Violin Playing* (Kassel: Bärenreiter, 2013), 29.

²⁹Sarch, “The Twentieth Century Violin,” 57.

A more comprehensive description of the “tango-like” *chicharra* or *lija* has been developed in this document taking as main references Alejandro Drago’s dissertation (in which he devotes more than ten pages to discuss history, notation, musical examples and other issues related to this effect), as well as Jeremy Cohen’s and Caroline Pearsall’s instructional videos.

1. **Sounding point:** traditionally, on the D string, behind the bridge, towards the tailpiece.

Usually on the middle of the part that is covered by a thread.³⁰

2. **Fine tuner:** violinists do not usually use fine tuners on this string, but if so, it is worth mentioning that some types of fine tuners may considerably shorten the length of the string behind the bridge, which will affect the sound, making it higher than usual for tango standards. One can easily see the difference of tone between the examples of Pearsall,³¹ who uses adjusters, and Cohen,³² who does not.

3. **Bow hold:** Drago compares this with holding a pen, a paper cutter, or a palette knife,³³ but this definition is not so clear without a visual resource. Cohen³⁴ and Pearsall,³⁵ who describe how to play this effect by video, make it clearer. The bow grip is adjusted in a way that the end of the bow is inside the palm, and the first finger presses flat against the top of the stick³⁶ (see Figure 1-1);

³⁰Drago, “Instrumental Tango Idioms,” 131.

³¹Pearsall, “Tango Music Effects 1 (Efectos 1).”

³²Jeremy Cohen, “Tango Techniques for Strings CHICHARRA,” YouTube video, 1:58, Posted by “Jeremy Cohen,” June 24, 2010. <https://youtu.be/UKFIRd8J2ik>.

³³Drago, “Instrumental Tango Idioms,” 132.

³⁴Jeremy Cohen is founding member and first violinist of the Quartet San Francisco has performed, composed, and arranged several tango works. He has also written stylistic etudes and duets for strings.

³⁵Pearsall, “Tango Music Effects 1 (Efectos 1).”

³⁶Cohen, “Tango Techniques for Strings CHICHARRA.”



Figure 2-1. Bow hold for playing the *chicharra* or *lija*.

4. **Position of bow hair:** perpendicular to the string and contacting all the hair, avoiding tilting the bow.³⁷
5. **Pressure and speed:** ultimately it must be felt by the performer as a means to reach the most resonant possible tone (the tone quality will be discussed soon). As a general guideline, Drago suggests that it can be “as an orchestral mezzo-forte on a G string, and the bow speed, although variable, goes from somewhat slower than a calm *detaché* for *tenuto* notes to the normal speed of *spiccato* for short notes.”³⁸
6. **Part of bow:** Drago mentions that “all the *lija* parts should be played within ten to twelve centimeters (four to five inches) to the frog”³⁹ (Figure 1-2). Cohen and Pearsall, however, demonstrate it much closer to the frog.⁴⁰ Experimentation proves that equivalent results can be achieved by playing in each place. It will probably depend on the performer’s bow, string, as well as his or her preference.

³⁷He also says that the “slightly tilted position, which is characteristic to many schools of violin technique, would only produce a tiny, toy-like *lija* sound.” (Drago, “Instrumental Tango Idioms,” 132).

³⁸Drago, “Instrumental Tango Idioms,” 132

³⁹Drago, “Instrumental Tango Idioms,” 133.

⁴⁰Cohen, “Tango Techniques for Strings CHICHARRA.”

7. **Rosin:** usually the effect requires more rosin on the bow than the usual for classical standards, but not too much is needed. One can use a bit more rosin than usual near the frog and practice it for a while until the thread of the string gets “dirty” enough. It should be good for a few more future uses without passing more rosin if the string is not cleaned afterwards.



Figure 2-2. Bow placed on the D string behind the bridge for the *chicharra/lija*.

Sound Quality Parameters

It may take some practice until it sounds as desired, considering this is an essentially rough and percussive effect, but some points can be made in the search for an interesting tone. As mentioned, the term *chicharra* simply means cicada, and the sound of this insect can be in fact a model for the effect.⁴¹ An approximate timbre can be reached with the violin, although it is much lower than the actual cicada’s sound. Example 2-1 is an exercise for developing it. This is basically an imitation (shortened and lowered) of the cicada’s “song,” a repeated short noise that goes faster and higher until it becomes a long and loud note.

⁴¹In case the reader is not familiar with the sound of cicadas, here is an example:
<https://youtu.be/ZG1uQ0DIyJo?t=35s>

sounding point for the *chicharra* listed on the previous section apply. A video demonstration of this example can be viewed [here](#).⁴⁴

Besides the cicada's "singing," a sound usually related to this technique is the sandpaper (the literal translation of *lija*) block, which was used by Piazzolla in his orchestrations as a substitute for the violin *lija*.⁴⁵ Another percussion instrument associated is the guiro, also employed in orchestrations of Piazzolla as a substitute to the violin effect.⁴⁶ Interestingly, some arrangements of Piazzolla music for strings call for "s. p. quasi guiro," like in Desyatnikov's arrangement of *Cuatro Estaciones Porteñas* for violin and string orchestra.⁴⁷

Those percussion instruments produce rougher sounds than that of the traditional tango-like *chicharra* or *lija*. If more roughness is desired, a means to find it on the violin is to play closer to the bridge. Illustrating this idea, a live rendition by Gidon Kremer and Kremerata Baltica of the "Primavera Porteña"⁴⁸ (arranged by Desyatnikov) has the principal second violin performing the *chicharra* almost on the bridge of the instrument, resulting in the aforementioned tone (and perhaps in the apprehension of most Argentine viewers). Desyatnikov's notation can in fact be interpreted as "sul ponticello, almost [like a] guiro," meaning that this tone is technically correct according to the arrangement, although distinct from that of traditional tango violin players. Curiously, the arrangement in question considers the percussion instrument (guiro) as a model for the violin effect, even though, according to Drago, the *chicharra/lija* produced on the violin was the model to the percussion instruments before.

⁴⁴Lourenço De Nardin Budó, *Cicada Song Exercise* YouTube video. <https://youtu.be/JsbBhGBHS88>.

⁴⁵Drago, "Instrumental Tango Idioms," 141.

⁴⁶Drago, "Instrumental Tango Idioms," 140.

⁴⁷Astor Piazzolla, *Las Cuatro Estaciones Porteñas*, arranged by Leonid Desyatnikov (Nuys, CA: Alfred Music Publishing Co., 2011).

⁴⁸"Piazzolla - Primavera porteña from 'Cuatro Estaciones Porteñas' (Gidon Kremer & Kremerata Baltica)," YouTube video, 7:29, Posted by "EuroArtsChannel," July 21, 2015.

A much different example of this effect takes place in a recording of the first and third movements of the piece “Concierto para Quinteto,” for bandoneon, double bass, piano, electric guitar, and violin. The original Piazzolla album *Nuevo Tango: Hora Zero* with the quintet *Nuevo Tango* has the violinist Fernando Suárez Paz performing the *chicharra* in a very resonant way.⁴⁹ Again, in an adaptation of this same piece performed by Gidon Kremer in his album *Hommage à Piazzolla*,⁵⁰ Kremer himself performs it with a rougher sound, probably by placing the bow slightly closer to the bridge, although not as much as the principal second violinist from the Kremerata Baltica mentioned previously.

There is no evidence found in the reviewed literature that points out a distinction between *chicharra* and *lija* in the context of tango, but one can make the argument that the first is to be played near the tailpiece (sounding more like a cicada), while the second should be played near the bridge (as a percussion instrument); but, of course, this is a rather free interpretation. Other variants are possible such as exploring other strings, except for the E. This is not only because of the especially annoying sound that could be produced, but rather because the body of the instrument will get in the way of the frog, meaning it would very likely to be hit and damaged (the *chicharra/lija* effect on different strings is demonstrated at this [link](#)).⁵¹

Typical Notation, Articulation, and Rhythm

Like many other tango effects, the notation of *chicharra* or *lija* is a bit problematic. Many times, the traditional scores do not even have these types of effects notated, as it was assumed

⁴⁹Astor Piazzola, “Astor Piazzola - Concierto para quinteto,” YouTube video, 8:49, Posted by “Astor Piazzolla - Tópico,” November 8, 2014, <https://youtu.be/wyduxcwG9ow>.

⁵⁰Arrangement for violin, piano, clarinet, double bass, and bandoneon <https://www.youtube.com/watch?v=DodZQsrttw4>.

⁵¹Lourenço De Nardin Budó, *Chichara Musical Example and on the Other Strings* YouTube video. <https://youtu.be/BmpheFZCG1U?t=10s>.

that the violinist would improvise them during the rests. When specified in the score, this effect is generally just an x-headed note in a space (not necessarily on the space corresponding to the open D string) with “*chicharra*,” or “*lija*” written above or below the staff. Based on his experience, Drago has expressed a personal preference of notation for this technique as shown in Example 2-2.⁵² It can, however, be misleading for one not used to traditional tango notation, since it is on the place of an E5, which corresponds to the violin open E string, while the technique is intended to be performed on the D string.



Example 2-2. Common notation for *chicharra/lija*.

Another common occurrence is notating it on the first space above the staff (where the G5 is located in treble clef), as in Example 2-3.



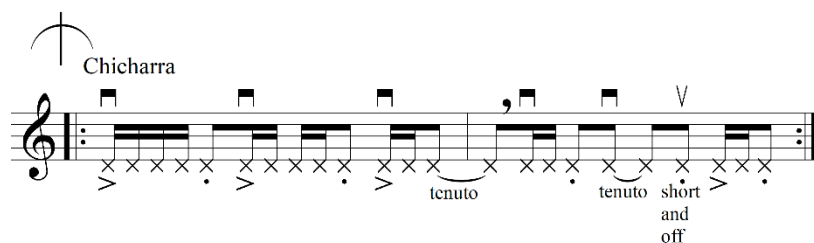
Example 2-3. Desiatnikov's notation for *chicharra/lija*.

For the sake of clarity, the adopted notation here will be an x-headed note in the place corresponding to the open string on which it is supposed to be played (behind the bridge, of course). There must also be a “behind the bridge” mark and the written indication “*chicharra*,” as shown in the previous Example 2-1 and the following Example 2-4.

There are a few typical occurrences of rhythm and articulation of this effect in tango. Drago highlights the following: “regular sixteenths” (short, detaché, accenting the first of the sixteenth-note group), “tenuto” (usually a long note after a regular sixteenth gesture), and “short-

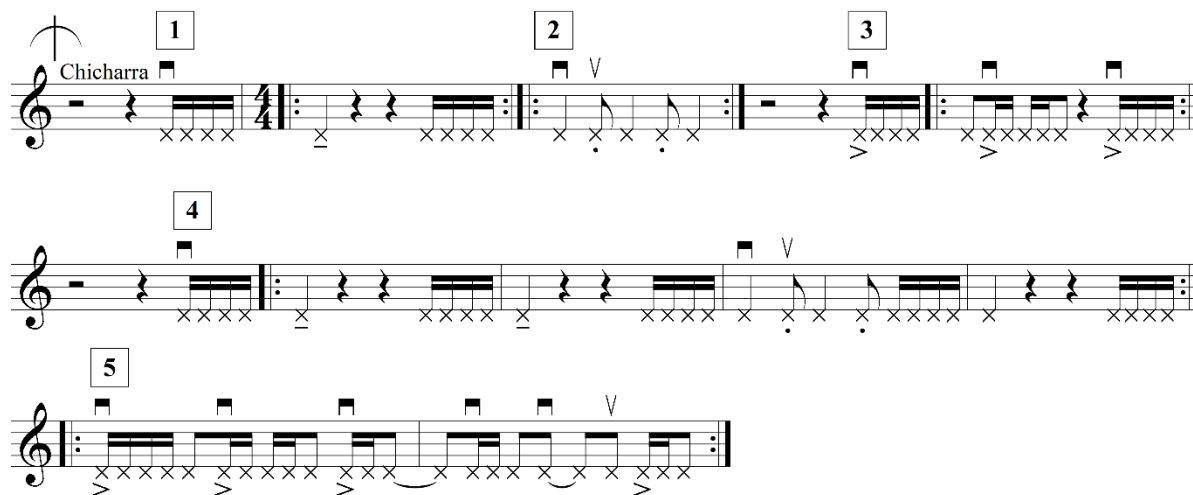
⁵²Drago, “Instrumental Tango Idioms,” 129.

and-off” (usually an up-bow, pick-up note gesture, where the bow shortly leaves the string, like a *collé*).⁵³ They are summarized in the following passage (Example 2-4 – video demonstration [here](#)),⁵⁴ and based on an example from Drago’s dissertation, but written here with the newly adopted notation:



Example 2-4. Typical *chicharra* pattern exploring different types of articulation.

Those concepts can be practiced in the following proposed exercises (Example 2-5), which are all based on typical motives used in tango.



Example 2-5. Exercises for *chicharra/lija*.

⁵³Drago, “Instrumental Tango Idioms,” 135-136.

⁵⁴Lourenço De Nardin Budó, *Chicharra Musical Example and on the Other Strings* YouTube video. <https://youtu.be/BmpheFZCG1U>.

Pizzicato: Triplet or Banjo

Some tango musicians utilize a technique that resembles a “grace-note pizzicato,” or, as Cohen says, “triplet pizzicato.”⁵⁵ Interestingly, each of the sources investigated here uses it in different manners or contexts. Cohen performs it by holding the bow with the first right hand (or index) finger, resting the thumb on the corner of the fingerboard, and plucking the string rapidly with the sequence fourth-third-second fingers.⁵⁶ With his approach, this technique is more practical on the E and G strings, but it is virtually impossible on the inner strings without hitting another string.

Pearsall demonstrates a similar gesture, although here the pizzicato is done without holding the bow and uses the third-second-first sequence. She calls it “banjo pizzicato,” or “*guitarra*” (guitar), and exemplifies it by playing an E5 on the A string, but intentionally hitting the open E as well for more resonance.⁵⁷

Experimentation shows that both approaches can be combined to make it more familiar to the classically trained violinist. In this proposed example, the thumb holds the bow against the palm of the hand so that the other fingers are free to perform the pizzicato.⁵⁸ Thus, one can do the gesture with either third-second-first (my preference), or fourth-third-second fingers (and it is technically possible also to work on a four-note gesture by using all four fingers in sequence, which is quite challenging). It is important that the fingers are aligned and that the joints near the fingertips are flexible.⁵⁹ This can be tested without the instrument, by “plucking” the left hand

⁵⁵Jeremy Cohen, “Tango Techniques for Strings TRIPLET PIZZICATO,” YouTube video, 1:58. Posted by “Jeremy Cohen,” June 24, 2010 <https://youtu.be/WNtmKON3I0s>.

⁵⁶Cohen, “Tango Techniques for Strings TRIPLET PIZZICATO.”

⁵⁷Pearsall, “Tango Music Effects 1 (Efectos 1).”

⁵⁸This idea is taken from Drago’s advice to perform the *tambor* “roll” technique, which is related to this one and will be explained soon. Drago, “Instrumental Tango Idioms,” 155.

⁵⁹Drago, “Instrumental Tango Idioms,” 155.

first finger (Figure 2-3). If the joints are flexible, the finger that is about to pluck the string and the next finger in the sequence should come close together as that finger touches the string. This may sound more confusing described with words than it actually is, so the following figures and [this video example](#)⁶⁰ have been created to illustrate the process.

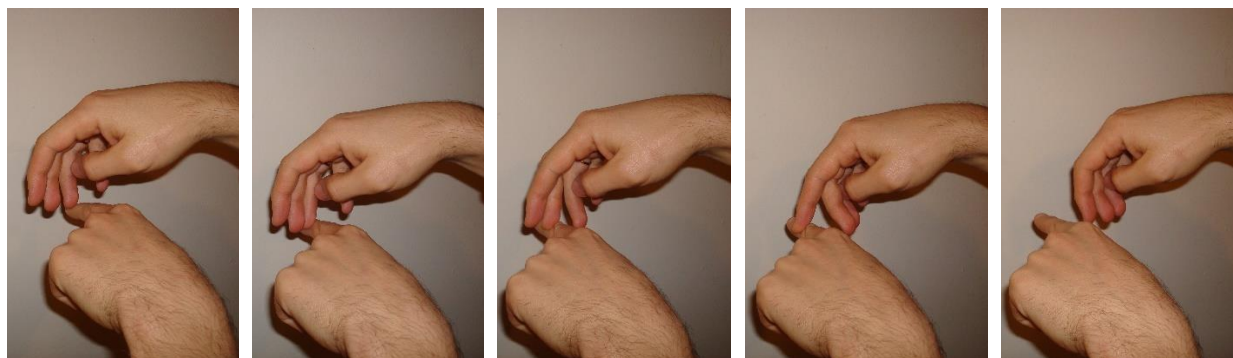


Figure 2-3. Practicing the grace-note sequence without the instrument.



Figure 2-4. Practicing the grace-note sequence on the instrument (G string).

Drago mentions a technique called “*guitarrita*” (“little guitar”) that might have a connection with this one, although he does not go into much detail about it. He explains that this effect is more often associated with the “old tango,” and not as much with Piazzolla’s music.⁶¹ As he describes, it is similar to the *tambor* (an effect that will be discussed next), but at a higher register and “applying the succession of pizzicati to single notes, bichords or the upper three strings of the violin, the resulting sound resembles guitar arpeggios.”⁶²

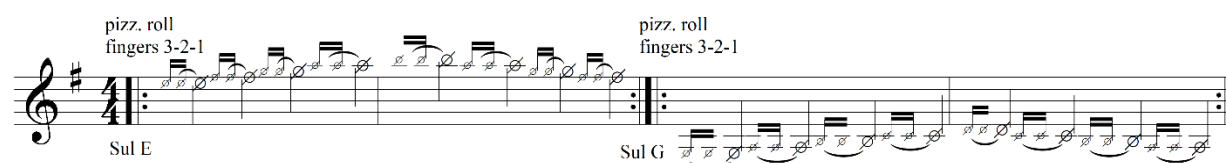
⁶⁰Lourenço De Nardin Budó, *Pizzicato: Triplet or Banjo* YouTube video. <https://youtu.be/WXIrDpqrBEO>.

⁶¹Drago, “Instrumental Tango Idioms,” 164

⁶²Drago, “Instrumental Tango Idioms,” 164

Although an interesting sonority, the “triplet” or “banjo” pizzicato must be treated carefully. An exaggerated amount of practice or the excessive occurrence of this technique in a piece can be damaging for the fingertips and harmful for the right arm for violinists who in general do not have a well-established routine of pizzicato practice, since it demands the action of muscles that are rarely used and callouses are not developed.

A simple practice exercise is shown on Example 2-6.



Example 2-6. Exercise for triplet/banjo pizzicato.

Pizzicato: *Tambor*

A very common pizzicato technique in tango is the *tambor*, which means “drum.” The best part of this effect, in this author’s opinion, is that it is perhaps the loudest possible percussive effect on the violin and yet it is completely harmless to the instrument, strings, and bow; and, apart from potential callouses and some hearing annoyance, it is inoffensive to the player as well. A somewhat similar technique is the pizzicato *effleuré* (“touched”), which means a pizzicato with the left-hand fingers touching, but not depressing completely, the string.⁶³ Van der Merwe also refers to the same technique as “split-tones.”⁶⁴ Tischhauser mentions a “muffled pizzicato” with the same characteristics, used in a string quartet by David Sheinfeld.⁶⁵ Although potentially from the same “family” of *tambor*, this is not quite the same. Kent Kennan and

⁶³Strange and Strange show an example from Ton de Leeuw’s *String Quartet No. 2* (Strange and Strange, *The Contemporary Violin*, 70).

⁶⁴Van der Merwe, “New Frontiers in the Art of Violin Performance,” 89.

⁶⁵Tischhauser, “A Survey of the Use of Extended Techniques,” 36, 120.

Donald Grantham, in their orchestration guide, have a mention of the “buzz pizzicato,” in which, “after being plucked, the string vibrates against the player’s fingernail.”⁶⁶ Dejana Sekulić gives the same description to a pizzicato used by Richard Whalley in the work *Ad Infinitum*.⁶⁷ Those can be considered vague descriptions of the *tambor*, whose more traditional directions for performance are as follows:

1. **Left hand fingers:** the second and third fingers should be placed on the D string in third position⁶⁸ avoiding harmonic nodes (for instance, near the place of A-flat and B-flat respectively). The effect also works with only one fingernail touching the G string, but it is easier to avoid a harmonic sound if two fingers are placed;
2. **Hand posture:** the goal is to slightly touch the G string only with the fingernails⁶⁹ of those fingers, thus, the instrumentalist should turn, from their point of view, the whole hand counterclockwise bringing the left elbow to the right just as much as necessary. The fingers may leave the D string and be placed between this and the G string, depending on the fingers’ width and the space between the strings;
3. **Touch on the G string:** it is important that the fingernail only barely pushes the string. Some would say that it should not be pushed whatsoever,⁷⁰ but the fact is that this must be tried and felt by the performer. Figure 2-5 sums up the description here so far.

⁶⁶Kent Kennan and Donald Grantham, *The Technique of Orchestration*. 5th ed. (Upper Saddle River, NJ: Prentice Hall, 1997), 67.

⁶⁷Dejana Sekulić, “Do You Hear Me? Handbook to Contemporary Violin Notation,” Dejana Sekulić: Violinist, Downloaded March 13, 2014, <http://www.dejanasekulic.com/news 17.html>.

⁶⁸Drago, “Instrumental Tango Idioms,” 152.

⁶⁹Pearsall, “Tango Music Effects 1 (Efectos 1).” Pearsall suggests touching the G string with a bit of the flesh of the finger as well, although she does not give very detailed directions.

⁷⁰Drago, “Instrumental Tango Idioms,” 152-153.



Figure 2-5. Second and third fingers touching the G string with fingernails.

4. **Pizzicato:** the technique is more effective if the plucking happens on the fingerboard, towards the center of the string, taking advantage of its flexibility⁷¹ to get a loud snare drum-like sound;
5. **“Roll:”** A very common occurrence of *tambor* in performances includes a pre-beat two-note roll.⁷² Here, the player must use a gesture like the previously mentioned “banjo,” to play a rapid triple pizzicato with third-second-first fingers in a row. Drago provides a great insight on how to perform it effectively:

(...) the fingers involved should be freed from the task of holding the bow (which will be held by the thumb against the palm); their tips should be aligned with the string, the upper articulation relaxed. The fingers do a slight grasping motion in succession: third - second - first. This is complemented with a motion of the right hand to the right, driven in part by the wrist, and in part by a movement “en bloc” of the whole right forearm. The main accent falls on the last note, always played with the first finger.⁷³

It is important to reinforce that stiffness is an enemy of this gesture and will only compromise the rhythmic control.⁷⁴ The same advice given to the “banjo” or triplet pizzicato regarding the motion of the fingers is valid here, meaning that control can be improved if the

⁷¹Drago, “Instrumental Tango Idioms,” 152-153.

⁷²Drago, “Instrumental Tango Idioms,” 153.

⁷³Drago, “Instrumental Tango Idioms,” 153-154.

⁷⁴Drago, “Instrumental Tango Idioms,” 155.

third and second fingers are placed closer as the third touches the instrument (as shown previously in Figure 2-4), while the first is apart. Again, that should be natural as the joints closest to the fingertips must be rather loose. A demonstration of the *tambor* effect, both the simple version and the one with a roll has been made available through [this link](#).⁷⁵

Notation

Just as for the *chicharra/lija*, the notation of *tambor* can be tricky. Very often, it is improvisatorially performed by the violinists during their rests. When notated, it is usually a x-headed note in the lower additional space with the written indication: “*tambor*,” or “*tamburo*.”⁷⁶ To avoid confusion between *tambor* and *lija* notation, Drago suggests the use of the notation demonstrated in Example 2-7, which is basically a slashed white note-head, which will be adopted here with some change. Again, his suggested notation puts the note-head on the place corresponding to an open string (D), while the stroke happens in another (G). While this notation is sufficient for tango performance, since the *tambor* is generally always played on the G string, it would be more consistent (and facilitate exploration of this technique on other strings) to notate it corresponding to the string to be plucked. Example 2-7 is an idiomatic exercise for developing the *tambor* on the G string. (Observe that no. 2 is the same as no. 1 although including a few instances of the roll as well.)

⁷⁵Lourenço De Nardin Budó, *Tambor* YouTube video. <https://youtu.be/IzjwwslS6C8>.

⁷⁶Drago, “Instrumental Tango Idioms,” 154.

1



2



Exercise 1 consists of two staves of music. The first staff, labeled '1', begins with a treble clef and a key signature of one flat (B-flat). It contains a sequence of notes: a quarter rest, a quarter note (B-flat), a half note (A-flat), and a half note (G-flat). This is followed by a repeat sign. The second staff, labeled '2', begins with a treble clef and a key signature of one flat. It contains a sequence of notes: a quarter rest, a quarter note (B-flat), a half note (A-flat), and a half note (G-flat). This is followed by a repeat sign. Both staves have a common time signature of 4/4.

Example 2-7. Tambor exercise on G string only.

Expanding the *Tambor*

1. *On other strings*: theoretically, the same procedures explained so far to play a G-string *tambor*, excluding the roll, can be applied to the other strings as well, although the “snare drum” quality might get mostly lost. Only on the E string it will be really problematic, as one does not have much room to place the finger on the side of the string, but some experiments can be made.

Example 2-8 and Figure 2-6 show how to build a “*tambor* chord” with the left hand, in a way that all strings can be plucked even at the same time. Since in this case only one fingernail is used for each string, one must be extra careful avoiding harmonic nodes and that is why the example shows the quarter-tone sharps. Observe, however, that the fingernail touch is not applied to the E string, being substituted to a regular string muffling procedure, by touching this string with the third and fourth fingers.

- * Touching the strings at these approximate pitches, avoiding harmonic nodes:
- G, D, and A with the finger nails;
 - E with fingertip, but without stopping it.
 - it is not a problem if a finger slightly touches more than one string

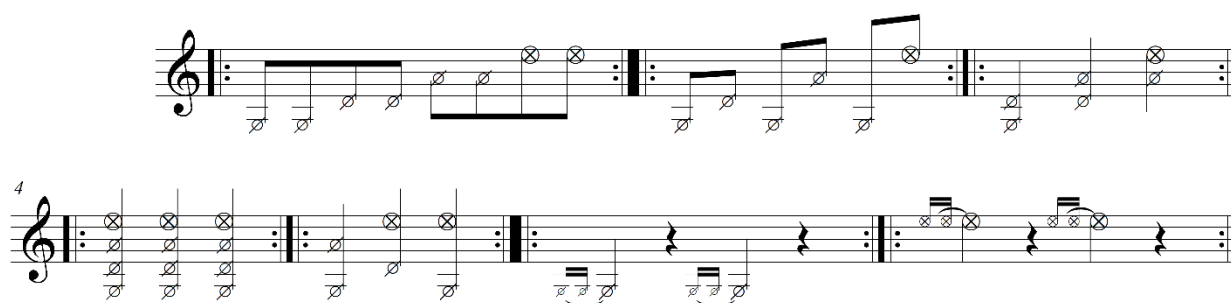


Example 2-8. Left hand pattern for “*tambor* chord.”



Figure 2-6. Execution of the “*tambor* chord” pattern.

By using this hand pattern, alternation of *tambor* effects on different strings and chords are possible. It can be practiced in the exercise in Example 2-9 (this example is demonstrated in [this link](#)):⁷⁷



Example 2-9. *Tambor* exercise on G, D, and A strings. The circled x-headed notes on E string indicates a simple string muffling, since the *tambor* is not practical on this string.

2. *Left-hand tambor*: The last expansion to the *tambor* that will be discussed here is with a varied form of left-hand pizzicato. With second and/or third fingers touching the G string with their fingernails (as described in the instructions earlier), the pizzicato here is performed by the first finger (on the same string) behind them with an “opening fist” motion, like a flick on the string. For the *tambor*, one must push the string as much as possible, taking advantage of its elasticity, for it forcefully rebound against the fingernails (see figures below). That will hardly be

⁷⁷ Lourenço De Nardin Budó, *Tambor on Different Strings* YouTube video. <https://youtu.be/1BFTiw-RWUk>.

viable with a different approach, considering that the first finger is usually the strongest and that it is not possible to pull the string as much to the other side (inwards). A video demonstration can be found [here](#).⁷⁸



Figure 2-7. Second finger touching G string with the fingernail.

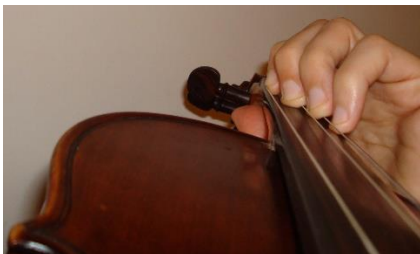


Figure 2-8. First finger pushing string away to the left.

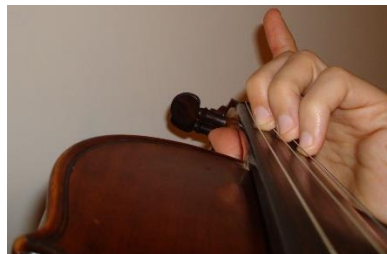


Figure 2-9. Moment right after releasing the string, like a flick.

The “Not so Innovative” Effects

There are tango techniques that, although having a distinct character when used in tango, are not essentially so unique. A few of them have been included in this survey for their representativeness. They have also been compiled in a single video, available [here](#).⁷⁹

Glissandi:

1. *Látigo* (“whip”): essentially a brisk glissando with a crescendo, usually upwards on the E string (or double-stopped), ending on an accented natural harmonic or undetermined pitch.⁸⁰ Pearsall and Cohen include an exact inversion of this motion under the same name, i.e. starting from an accented forte downbeat high pitch and sliding quickly down with a decrescendo (Drago

⁷⁸Lourenço De Nardin Budó, *Tambor on Different Strings* YouTube video. <https://youtu.be/JUmyAfvgyrs>.

⁷⁹Lourenço De Nardin Budó, *Miscellaneous Tango Effects* YouTube video. <https://youtu.be/zmVDHta0IM8>.

⁸⁰Drago, “Instrumental Tango Idioms,” 143-145.

calls this one *bajada* – “down slide”).⁸¹ Pearsall adds an old-fashioned type of *látigo*, with a tremolo.⁸²

2. *Sirena* (Siren): A slow double-stopped glissando down, usually on A and D, or D and G strings, often used in slow tunes, such as “Oblivion.”⁸³

Bow Articulation:

1. *Arrastre*: recurring in bass lines, but also possible on the violin, this has been well summarized by Drago who says that “the *arrastre*, or dragging, essentially means that the strong beat of a measure is prepared in its pitch, attack, volume, or all three parameters, by a preceding note slurred to it. The standard duration of this preparation note would be a half of the beat, and this note may or may not be written.”⁸⁴

2. *Cepillo* (brush): a lateral bowing near the frog from the fingerboard towards the bridge, which is used to add “dirtiness” to the sound and is sometimes applied on the starting of *arrastre* stroke, causing it to become heavier.⁸⁵ Other examples of lateral bowing exist in twentieth-century pieces such as Salvatore Sciarrino’s *Caprice No. 3* and *No. 6* (1975-76)⁸⁶ and, according to Strange and Strange, *My Blue Sky No. 2*, by Joji Yuasa (1979).⁸⁷

⁸¹Jeremy Cohen, “Tango Techniques for Strings LATIGO,” YouTube video, 1:58, Posted by “Jeremy Cohen,” June 24, 2010 <https://youtu.be/3ZZOF17ieN0>. Pearsall, “Tango Music Effects 1 (Efectos 1).” Drago, “Instrumental Tango Idioms,” 162.

⁸²Pearsall, “Tango Music Effects 1 (Efectos 1).” Pearsall’s mention of the old-fashioned version is found on typical performances by the Orchestras of Osvaldo Fresedo, such as in the recording of *Tigre Viejo* (1934): <https://www.youtube.com/watch?v=ohZpzXpqIE>

⁸³Pearsall, “Tango Music Effects 1 (Efectos 1).” Drago, “Instrumental Tango Idioms,” 161.

⁸⁴Drago, “Instrumental Tango Idioms,” 63.

⁸⁵Pearsall, “Tango Music Effects 1 (Efectos 1).”

⁸⁶Salvatore Sciarrino, *Sei Capricci per Violino* (Roma: Ricordi, 1976), 6. The composer has literally called the effect “to brush” – “*spazzolare*” – as well, but here it is supposed to sound fast and light, thus, at the upper half of the bow.

⁸⁷Strange and Strange, *The Contemporary Violin*, 17.

Pizzicato Behind the Bridge:

Definitely not a very unique effect, but worth mentioning, this is usually an arpeggiated pizzicato in the strings behind the bridge, also referred to as “milonga pizzicato.”⁸⁸ As with many other violin effects, this can be heard in the third movement of the already mentioned piece “Concierto para Quinteto” from the album *Tango Zero Hour*.⁸⁹

Percussion: Anillo (ring)

Other than emulating percussion in non-percussive instruments, tango also traditionally involves a great deal of actual knocking and slapping on the instruments. These types of effects have been purposely omitted in this survey for two reasons: the concern that violinists usually have regarding hitting their own instruments; and because it has been already extensively discussed in previous studies. In the third chapter of *The Contemporary Violin*, titled “Percussion Techniques,” Strange and Strange provide many examples of beating on the instrument with hand, fingers, knuckles, bow, and what they call “other strikers,” like a thin wooden, plastic, or glass dowel.⁹⁰ Tischhauser presents a survey of percussion effects for the violin and their notation according to the selected repertoire.⁹¹ Sarch spends pages discussing different ways to produce percussive techniques also providing musical examples.⁹²

⁸⁸Pearsall, “Tango Music Effects 1 (Efectos 1).”

⁸⁹Astor Piazzola, “Astor Piazzola - Concierto para quinteto,” YouTube vídeo, 8:49, Posted by “Astor Piazzola - Tópico,” November 8, 2014, <https://youtu.be/wyduxcwG9ow>. <http://www.nonesuch.com/albums/tango-zero-hour>

⁹⁰Strange and Strange, *The Contemporary Violin*, 97-111.

⁹¹Tischhauser, “A Survey of the Use of Extended Techniques,” 48.

⁹²Sarch, “The Twentieth Century Violin,” 272-282.

The most unusual percussive technique found in this research is the *anillo* (“ring”), a very simple tango technique, defined by Drago as an effect “which implies knocking the scroll of the violin with a finger of the left hand with a ring on it. The resulting sound is surprisingly sharp and powerful”⁹³ (Figure 2-10).



Figure 2-10. *Anillo* ("ring") knocking on the scroll.

Experimentation proved that knocking on the tuning pegs also provides an interesting similar sound. This technique is also good because it produces a relatively loud percussive effect that can be performed without causing much damage to the instrument, especially in the case of knocking the tuning peg (Figure 2-11). The inconveniences for this technique are the fact that some players are not comfortable playing with a ring in the left hand⁹⁴ and that the player might not have a ring.



Figure 2-11. *Anillo* on the tuning peg.

⁹³Drago, “Instrumental Tango Idioms,” 163.

⁹⁴If there is time enough (rests or end of movement) the player can change the ring from the right to the left hand and vice-versa, as needed.

CHAPTER 3

BRAZILIAN CONCERT MUSIC

Unique techniques in Guerra-Peixe's *Variações Opcionais*

César Guerra-Peixe (1914-1993), a composer deeply involved with the Brazilian nationalistic⁹⁵ movement and one of the most relevant Brazilian composers from the twentieth century, wrote the *Variações Opcionais* (“Optional Variations”) in 1977.⁹⁶ This variation set has a short theme and seven variations that, as the name suggests, can be omitted or performed at the performer’s discretion. Also a violinist, Guerra-Peixe explored some very unusual techniques on this instrument, some of which are not covered in any reviewed extended technique survey and will be discussed here. This study has taken some parameters from the Brazilian violinist and scholar Eliane Tokeshi, who has studied and recorded the piece.

“Hand muting”

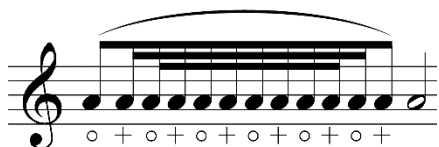
In the fifth variation of this piece, the composer notated “with the four fingers on the upper body, close to the fingerboard, muffling (+) and releasing (°) the sound – aleatoric rhythm”⁹⁷ (Example 3-1). Although many extended techniques studies and compilations discuss

⁹⁵The piece studied here is definitely not a very representative example of this movement, though.

⁹⁶The work was originally written for violin and accordion, but transcribed to violin and piano by the composer himself. Eliane Tokeshi, “Técnica Expandida para Violino e as Variações Opcionais de Guerra Peixe: Reflexão sobre Parâmetros para Interpretação Musical,” *Hodie* 3, no. 1-2 (2003): 54, 57.

⁹⁷“Com os 4 dedos sobre o tampo superior, junto ao espelho, abafando (+) e soltando (°) o som – ritmo aleatório.” César Guerra-Peixe, *Variações Opcionais (para violino e piano)* (Rio de Janeiro, Brazil: Sesc Partituras,

timbre variations and muting the instrument, they usually only refer to it by using mutes or changing sounding points. In the most comprehensive volume found on the topic, by Strange and Strange, they write about the usage of many kinds of mutes and ways of changing timbre, including electronic resources and extended violins, but do not discuss the relatively simple procedure of pressing the hand on the body of the instrument.⁹⁸



Example 3-1. Guerra-Peixe's *Variações Opcionais*, variation 5, m. 1.

Tokeshi brings a few insights on the performance of this effect, keeping in mind that the result should be slight oscillations in the timbre, as if the mute were being placed on and taken off quickly.⁹⁹ In her opinion, one must place the fingertips on the body of the instrument, muting it by laying the fingers and pressing the wood. Also, the optimal spot for that is the upper body of the instrument on the side of the E string.¹⁰⁰ I might add that the palm of the hand must also be engaged in this process, pressing and releasing the lower body of the instrument as well. Figures 3-1 and 3-2 illustrate that idea.

n. d.), Accessed December 17, 2017.

<http://www.sesc.com.br/portal/site/sescpartituras/resultado/resultado?comp=3D8FC8E9D311380B832579CE006FDA9&part=DAD5037BDFEC5646832579DC006F13DC>

⁹⁸Strange and Strange, *The Contemporary Violin*, 185.

⁹⁹Tokeshi, "Técnica Expandida para Violino," 54.

¹⁰⁰Tokeshi, "Técnica Expandida para Violino," 55.



Figure 3-1. Fingertips placed on the violin without muffle.



Figure 3-2. Fingers in a flat position, muffling the sound.

The sound oscillation is best heard if the bow is steadily played at midway between the bridge and the fingerboard (avoiding *sul tasto* and *ponticello* timbres).¹⁰¹ Also, some interference by the movement of the instrument might be inevitable (especially if the effect is performed rapidly), but one must avoid an unsolicited percussive effect by hitting on the instrument with the fingers.¹⁰² A video demonstration has been provided at this [link](#).¹⁰³

The obvious disadvantage of this technique is the fact that one cannot play notes other than open strings. However, it is an interesting and straightforward means of altering the timbre and it has been incorporated in one of the caprices developed along with this document, “A Miniature” (Appendix B). As shown in Guerra-Peixe’s example, his notation is made with plus signs¹⁰⁴ (for muffling) and small loops (for releasing), however, since these symbols can possibly be mixed up with left hand pizzicato and harmonics respectively, different symbols have been adopted here: a filled circle for the muting, and an unfilled dashed circle for the releasing. Also, the notation may happen in two different ways: the first (Example 3-2) is simply indicating which notes are to be muted and which ones are not; the second (Example 3-3), represents a

¹⁰¹Tokeshi, “Técnica Expandida para Violino,” 55.

¹⁰²Tokeshi, “Técnica Expandida para Violino,” 55.

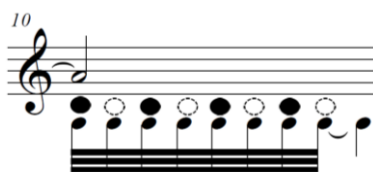
¹⁰³Lourenço De Nardin Budó, *Hand Muting* YouTube video. https://youtu.be/KCiVgSDZQ_o.

¹⁰⁴Notation possibly borrowed from the French horn stopping technique.

rhythm to be made by the left-hand muting while holding a note with unrelated duration with the right hand. This is to reinforce the idea of not interfering with the timbre change other than with the hand muting.



Example 3-2. Alternative notation for Guerra-Peixe's hand muting technique.



Example 3-3. Alternative notation for hand muting while holding a long note.

“Bowed” pizzicato

In the sixth variation of *Variações Opcionais*, Guerra-Peixe calls for a very unusual kind of pizzicato or, more specifically, a “pizzicato with the bow touching the strings”¹⁰⁵ (Example 3-4). This effect is also included in this study as it is not mentioned in other surveys. To name a few examples from the literature, in the chapter “The Fingers” of *The Contemporary Violin*, Strange and Strange present different possibilities of pizzicato by using the pad of the fingers, the fingernail, plectrums, and combinations.¹⁰⁶ Tischhauser presents several kinds of pizzicato and their notation according to the selected composers.¹⁰⁷ Sarch discusses twenty-three different pizzicato techniques, including coordinating left hand pizzicato with bowing in another string.¹⁰⁸ Yet, none of those works brings the peculiarity of coordinating pizzicato with the bow touching the same string being plucked.

¹⁰⁵“Pizz. com o arco encostado nas cordas.” César Guerra-Peixe, *Variações Opcionais* (para violino e piano) (Rio de Janeiro, Brazil: Sesc Partituras, n. d.), Accessed December 17, 2017. <http://www.sesc.com.br/portal/site/sescpartituras/resultado/resultado?comp=3D8FC8E9D311380B832579CE006FDA9&part=DAD5037BDFEC5646832579DC006F13DC>.

¹⁰⁶Strange and Strange, *The Contemporary Violin*, 57-71.

¹⁰⁷Tischhauser, “A Survey of the Use of Extended Techniques,” 31-36.

¹⁰⁸Sarch, “The Twentieth Century Violin,” 232-261.



Example 3-4. Guerra-Peixe's *Variações Opcionais*, variation 6, mm.1-5.

Guerra-Peixe's indication seems straightforward, but some details regarding the performance must be considered. Depending on where the bow is placed on the string, it may produce different kinds of effects. The most obvious is the string muffling, but another is the distortion of the pitch, which increases as the bow is placed closer to the fingerboard. Tokeshi has suggested that the desired effect is simply noise added to the pizzicato sound,¹⁰⁹ and not an entirely muffled tone or much distorted pitch. Therefore, in her interpretation, the bow should be placed on the bridge with the hair slightly loosened in a way that half of the hair will be behind the bridge (see Figure 3-4). The performer would have time enough to loosen the hair and to tighten it again since the composer wrote a fermata in the previous pause (end of the previous variation) and a piano solo in the beginning of the next variation.¹¹⁰ Nonetheless, a very solid effect is possible with the bow regularly tightened as well.

The bow grip for that purpose is achieved by holding it with the first finger and the thumb on the stick with the frog under the fist (Figure 3-3), so that the other fingers will then be free to pluck the string.¹¹¹ Tokeshi also comments that the resulting sound can be similar to that of the *koto*, a traditional instrument in Japan,¹¹² but I would argue that the timbre is closer to that of the Japanese *shamisen*. A video demonstration can be seen through [this link](https://youtu.be/QckS8Rca10A).¹¹³

¹⁰⁹Eliane Tokeshi, "Técnica Expandida para Violino e as Variações Opcionais de Guerra Peixe: Reflexão sobre Parâmetros para Interpretação Musical." *Hodie* 3, no. 1-2 (2003): 55.

¹¹⁰Tokeshi, "Técnica Expandida para Violino," 55.

¹¹¹Tokeshi, "Técnica Expandida para Violino," 55.

¹¹²Tokeshi, "Técnica Expandida para Violino," 56.

¹¹³Lourenço De Nardin Budó, *Bowed Pizzicato* YouTube video. <https://youtu.be/QckS8Rca10A>.



Figure 3-3. Bow hold for the "bowed pizzicato."



Figure 3-4. Bow placed on the bridge with the hair slightly loosened.

A perhaps simpler approach to the "bowed" pizzicato is by plucking with the left hand. This is feasible in Guerra-Peixe's variation, which is rather simple, but could prove less practical in more complex passages (demonstration available [here](#)).¹¹⁴ However, even with the right-hand pizzicato, several restrictions will apply. For example, the pizzicato will only be possible relatively near the bridge and, obviously, the index finger cannot be used to pluck. Keeping the bow firm on the bridge/strings and plucking without producing some undesirable bow noise may be also not so easy at first, but not so difficult to control with some practice.

Double-stops and chords using pizzicato near the bridge are not so practical. More than one string may be performed with different fingers plucking each string, but due to the curvature of the bridge, it is difficult to maintain the bow touching more than one string, unless they are adjacent strings. Since there are only three fingers available, four-note chords become impossible, unless slowly arpeggiated. It is important to highlight that this technique is much more effective with open strings and in low positions, and that loud dynamics are not viable. An

¹¹⁴Lourenço De Nardin Budó, *Left-Hand Bowed Pizzicato* YouTube video. <https://youtu.be/R1t6q3nDvyY>.

interesting effect that can be added to this is a type of bow vibrato, produced by rapidly lifting and setting the bow on the bridge and strings. This is also demonstrated at [this link](#).¹¹⁵

Prepared Violin in Marcílio Onofre's *Caminho Anacoluto II*

Cuíca

The only instance of prepared instrument in this survey is the *cuíca*,¹¹⁶ the effect named after the squeaky sounding friction drum typically employed in Brazilian samba.¹¹⁷ The preparation consists simply in tying a piece of bow hair on a string, and it is performed with the friction of the right-hand thumb and index finger passing along the hair¹¹⁸ (Figure 3-5).



Figure 3-5. Demonstration of the *cuíca*.

¹¹⁵Lourenço De Nardin Budó, *Bowed Pizzicato – “Vibrato”* YouTube video. <https://youtu.be/QckS8Rca10A?t=22s>.

¹¹⁶Simply because it requires a preparation, by attaching a foreign object to the instrument, in this survey it has been classified as a “prepared violin” technique. However, it is good to note that, from the point of view of the dedicatee of the piece, it could rather be defined as “expanded violin” because this incorporation does not create a “new” instrument. Rodrigo de Almeida Eloy Lôbo, “Compositor e Intérprete: Reflexões Sobre Colaboração e Processo Criativo em Caminho Anacoluto II – quasi-Vanitas de Marcílio Onofre.” (Master’s thesis, Universidade Federal da Paraíba, 2016), 43-44.

¹¹⁷This instrument has a stick attached to the skin inside its body. The sound is produced by the friction of the fingers with a wet cloth.

¹¹⁸ Lôbo, “Compositor e Intérprete,” 4.

Onofre calls for this effect in *Caminho Anacoluto II – quasi Vanitas* (2015) for violin and piano, a piece he composed in collaboration with the Brazilian violinist Rodrigo Lôbo.¹¹⁹ With the term *cuíca*, the composer “emphasizes the sound production approach rather than the result per se.”¹²⁰ As in a *cuíca*, the vibration created by the finger friction (in this case, on the tied piece of bow hair) is the main element of tone production, which provokes the vibration of the string. However, the sound result is rather rough, quite different from the squeaky tone of that percussion instrument, especially when made on the G string as in Onofre’s piece. In this process, the left hand can stop the string as usual, producing different notes.

This technique has been employed by the composer in other works and even prior to *Caminho Anacoluto II*, in his second string quartet (2011); however, the notation has not been completely well-established yet. In *Caminho Anacoluto II*, the composer has written it with circled rectangular note-heads, accompanied by the text “*cuíca*,” but he also usually utilizes “a rectangular note-head slashed almost horizontally.”¹²¹

Technical Issues and Possible Expansion

Experimentation has shown that, to make the friction work effectively, a great deal of rosin is necessary and it is also “recommended to tie at least three bow hairs on the G string prior to the performance – one to perform the *cuíca* and two for quick replacements in case of accidental breaks.”¹²² As one can imagine, the demand of deliberate bow hair sacrifice can become controversial very quickly. It may bring concerns or even outrage to some players, thus,

¹¹⁹Part of a cycle that also contains *Caminho Anacoluto I*, for cello and piano, and *Caminho Anacoluto III*, for saxophone and piano.

¹²⁰Marcílio Onofre, e-mail message to author, February 01, 2018.

¹²¹Marcílio Onofre, e-mail message to author, February 01, 2018.

¹²²Vladimir Machado Rufino, “Styles and Extended Techniques in 6 Works for Violin from Paraíba since 1952,” (DM thesis, University of Alberta, 2017), 20.

it is advisable to use it moderately. One can prepare for this situation by using a piece of hair that “naturally” broke. An even more secure option would be keeping old ones after doing a rehair, but that may involve planning to do so well ahead of time, depending on how often the replacement is done by the instrumentalist. Other types of thread may be tried, but will hardly produce the exact same effect.

It is important to mention that, once a piece of hair is tied on a string, if the performer needs to play normally with the bow or pizzicato, this hair will most likely vibrate with it and interfere in the sound, especially when it is not very tight. Of course, if tied on D or A strings, it will be also impossible to avoid the hair touching the next string, thus making even more noise as this string vibrates. If it is done on the G or E strings, it can be kept on the side of the instrument, at least avoiding contact with other strings.

It is important to be aware of what sounding points are going to be used with regular bowing and how high on the fingerboard one needs to play with the *cuíca* effect on the chosen string, so that the best placement of the piece of hair can be determined. If the entire range from *molto sul tasto* to *molto sul ponticello* is needed, the hair should not be tied there. However, as it will be lower on the fingerboard, it will not allow the *cuíca* effect at higher positions (and, obviously, the hair will get in the way of the left-hand fingers when playing ordinarily in high positions as well).

After the whole effort of tying a piece of hair on a string is made, one may ask what else can be done. As an answer, four other bizarrely interesting effects are described here as well: rosining the hair; hair pizzicato; muffling the strings; and hair vibrato.

1. *Rosining the hair*: as previously explained, the tied piece of hair needs to be very well rosined to effectively produce friction with the fingers. This experimentation has also shown that

the simple act of rosining the tied hair can produce a sound. Since so much rosin is needed, the sound of rosining may be compositionally availed as well. In order to do that in a performance, there must be a table to place the violin on while passing the rosin (Figure 3-6), or at least a chair, so that the performer can do so with the instrument on his or her lap.



Figure 3-6. Rosining the tied piece of hair.

2. *Hair pizzicato*: when stretched taut, the tied hair can be plucked producing an interesting sound. Of course, it involves pulling the hair and plucking it at the same time, which can be easily done with both hands while the instrument is on a table or at the player's lap. However, if the instrument is in playing position, the best option is to hold the hair with the *right hand* first (index) finger and thumb, and pluck with second, third, or fourth fingers of the *same hand*, in a procedure analogous to a normal left hand pizzicato (Figure 3-7). In this case, extra care is required to avoid breaking the hair by plucking it too hard.

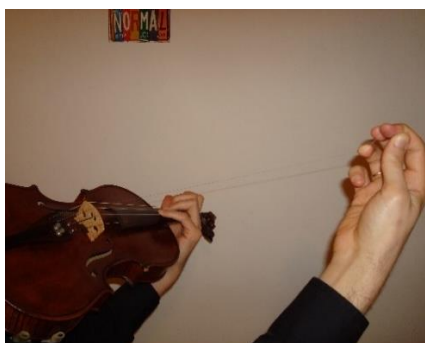


Figure 3-7. Pizzicato on tied piece of hair.

3. *Muffling the strings*: if tied on the G string, as in *Caminho Anacoluto II*, another possibility is to pull the hair down in a way that it touches all four strings (Figure 3-8), muffling them to produce a very distorted pizzicato sound. The limitation here is the fact that only left-hand pizzicato will be practical. Right-hand is also possible, but it involves the even more awkward approach of holding the hair with the left hand, thus only enabling open strings and having to hold the instrument between jaw and shoulder only.

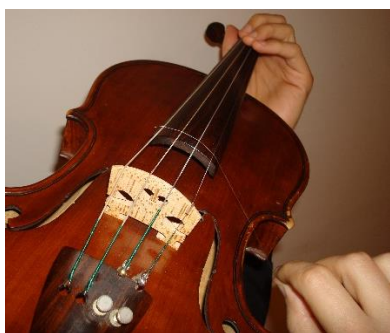


Figure 3-8. Muffling the strings with tied piece of hair.

4. *“Hair vibrato”*: lastly, if a left-hand pizzicato is performed on the string in which the hair is tied, the hair can be used to make a sort of vibrato, by straightening and loosening it quickly. All the *cuíca* related effects are demonstrated in this [online video](https://youtu.be/g6ARqUe1TGs).¹²³ Also, the caprice “2018 – for the *cuíca* effects,” composed as a didactic resource and part of this document, provides experimental use of those techniques.

¹²³Lourenço De Nardin Budó, *Cuíca Effects* YouTube video. URL: <https://youtu.be/g6ARqUe1TGs>.

CHAPTER 4

BOW CHOPS FROM NORTH AMERICAN FOLK MUSIC

A percussive technique originated in bluegrass fiddling,¹²⁴ bow chops are nowadays extensively used, mostly in popular genres. Bow chops have been popularized by fiddlers such as Richard Greene,¹²⁵ Tracy Silverman, Casey Driessen, and particularly Darol Anger, who along with his fellow players from Turtle Island Quartet championed a “groovy” approach to the string quartet.

This is not an obscure technique, at least in the United States or for violinists trained in bluegrass, jazz, or funk; however, it does not figure very often in concert music or within the extended violin technique academic research corpus. In the section about bow overpressure, Strange and Strange briefly discuss bow chops and give some steps to perform it (based on a letter written by Darol Anger to the authors), but not very deeply nor with an actual musical example.¹²⁶ As part of her study about Turtle Island Quartet’s music, Sally Hernandez goes into more detail about this technique, including stylistic observations regarding the quartet’s pieces, but the insights on how to perform the technique, whose main source is also Anger, are still rather abridged. On the World Wide Web, however, one can find plenty of advice on learning

¹²⁴Strange and Strange, *The Contemporary Violin*, 21.

¹²⁵Sally Hernandez also claims that Greene is the inventor of this technique. Sally Hernandez, “Teaching Turtle Island Quartet Music: Selected String Orchestra Pieces for High School and College Musicians,” (DMA diss., Florida State University, 2013), 15. ProQuest 3612430.

¹²⁶Strange and Strange, *The Contemporary Violin*, 21-22.

this technique and its variants, mostly by violin and cello players with a solid background in vernacular genres.

Basic Instructions

After reviewing different sources, a few interesting ones were selected to help build a comprehensive survey of the bow chopping performance. The descriptions here rely on them, as well as on experimentation. Again (like the tango effects earlier discussed) it is worth mentioning that stylistic aspects of fiddling, bluegrass, and jazz are not a central concern here and the perspective is from the classically trained musician intending to blur borders in violin playing. The most basic bow chop effect is a percussive down-and-up bow stroke, but variants of this technique have been developed with time and some will be covered here as well. Before going to them, however, it is fundamental to learn all general aspects that involve this technique family, namely:

1. **Rosin:** the “number one” (according to Casey Driessen) is to spread rosin near the frog, which is the only part of the bow where the stroke happens.¹²⁷ The effect is possible with just a little more than usual for classical standards, avoiding a rosin shower on the instrument; but the more rosin, the more the percussiveness of the stroke, especially in its variants, will be prominent.
2. **Left hand:** for a basic percussive chop, the left hand may only touch the strings, muffling them to avoid another sound interference.¹²⁸ The down-bow does not actually depend on

¹²⁷Casey Driessen, “Chop 101 My First Chop,” *Techniques and Skills with Casey Driessen, Series One: The Chop [Mobile]*, M4V video 7:14, Modified April 8, 2014, downloaded December 19, 2017, <http://caseydriessen.spinshop.com/>.

¹²⁸Driessen, “Chop 101.”

this, but if strings are not muffled, the up-bow chop will definitely sound as an undesired definite pitch.

3. **Bow grip (1):** one must hold the bow as much as possible at the frog, lower than a regular classical grip. The thumb can actually be placed entirely touching the frog,¹²⁹ as shown in Figure 4-1.



Figure 4-1. Lower grip.

4. **Tilt:** Contrarily from what is commonly practiced in classical playing at the frog, the bow chop is generally performed with an “outwards” bow tilt; i.e., the bow rotates with the hair turning towards the fingerboard, while the wood goes towards the bridge¹³⁰ (Figure 4-2).

¹²⁹“The Chop - Latin Techniques for Violin” <https://www.youtube.com/watch?v=kmqHu4m-5F8>
<http://www.onlinelessonvideos.com/THE-CHOP-Latin-Rhythm-Techniques-for-Violin.html>

¹³⁰Driessen, “Chop 101.”



Figure 4-2. Bow tilt.

5. **Bow grip (2):** the referred rotation happens with wrist and fingers, especially the thumb, which must be straightened (Figure 4-3).¹³¹ The other fingers follow the same motion, but remain flexible as we will see next. (Figure 4-4). Total rigidity (Figure 4-5) is not necessary (and is never desired in violin playing), but the normal flexion of the thumb must not happen. Instead of a flexible shock absorber, the thumb operates just as a lever against the flexible motion of the other fingers, helping to keep the tilt of the bow for the percussive attack. This can be practiced only with the bow by alternating between the positions in Figure 4-3 and Figure 4-4:

¹³¹James Reel, "Darol Anger Divulges His Modern Chop Technique," *Strings*, no. 119 (May 2004), <http://www.allthingsstrings.com/Technique/VIOLIN/Darol-Anger-Divulges-His-Modern-Chop-Technique> (accessed January 20, 2012). Quoted in Hernandez, "Teaching Turtle Island Quartet Music," 49.



Figure 4-3. Straightened thumb.



Figure 4-4. Flexed fingers (thumb remains straight as possible).



Figure 4-5. Excessively rigid thumb.

Players who have been deeply immersed in folk playing traditions might use the fingers differently; e.g., reaching the edge of the frog with straightened second and first fingers (Figure 4-6); or with the fourth finger completely bent “inwards” (Figure 4-7).



Figure 4-6. Paul Huppert.¹³²



Figure 4-7. Casey Driessen.¹³³

Darol Anger (Figure 4-8) and Avery Ballotta (Figure 4-9), however, present a bow grip that may look less intimidating to the classically trained violinist.

¹³²Huppert, Paul. “THE CHOP - Latin Rhythm Techniques for Violin,” YouTube video 7:57, Posted by “OnlineLessonVideos,” March 5, 2012, <http://www.onlinelessonvideos.com/THE-CHOP-Latin-Rhythm-Techniques-for-Violin.html>.

¹³³Driessen, “Chop 102.”



Figure 4-8. Darol Anger.¹³⁴



Figure 4-9. Avery Ballotta.¹³⁵

6. **Arm and shoulder:** a consequence of the new bow hold and tilt is that the arm will have less visible activity and get slightly closer to the body. Except for changing strings, the shoulder does not move so much as well, but muscles in the arm and shoulder are still working and one must be aware of static tension when practicing it.
7. **Bow direction:** as some players advise, the bow is not to be dropped at exactly 90 degrees from the string, as in usual bowing. On the violin, this angle must be changed by slightly turning the tip closer to the player's head (Figure 4-10).¹³⁶ One of the variants of the simple bow chop is the "slanted chop," which will be covered here separately as well.¹³⁷

¹³⁴"Darol Anger Rhythm Technique Lesson," YouTube video 2:31, Posted by "DaddarioOrchestral," Feb 11, 2009. <https://youtu.be/O3HudvJB1b0>.

¹³⁵"How to Chop on Fiddle : Avery Ballotta" YouTube video 5:47, Posted by "LoftSessionsMusic," March 20, 2015 <https://youtu.be/ZdasU8dbDCY>.

¹³⁶Suzanne Paul, "How to Chop," posted August 1st, 2013, YouTube video 5:08, <https://youtu.be/Er-sXaHf0TI> accessed January 20, 2018, http://www.groovecello.de/howtochop_video_e.shtml.

¹³⁷This will be even more angled and farther from the bridge.



Figure 4-10. Bow placed on the string at a different angle.

Bow Chop Technique Family

Down-bow drop or “hard chop”:¹³⁸ it is a rapid movement. One can think of the motion as a free fall of the right hand as a block, in which the violin gets in the way.¹³⁹ It is recommended to start practicing on the A string, at half way between bridge and fingerboard, with the bow not too far from the string (Figure 4-11). The angle and tilt of the bow, as well as the inclination of the string,¹⁴⁰ should help create a forward (to the fingerboard) movement, which, combined with the downward one, provokes a slight drag of the bow hair that provokes the percussiveness of this stroke (Figure 4-12).¹⁴¹ The effect is only played at the frog, with a

¹³⁸Term used by Suzanne Paul in her directions on how to play her piece “Chop ‘till you Drop.” Paul, Suzanne. “Chop ‘till You Drop (Excerpt)”. Accessed January 20, 2018. http://www.groovecello.de/pdf/NB_Howtochop_Vi.pdf.

¹³⁹Driessen, “Chop 101.”

¹⁴⁰Driessen, “Chop 101.”

¹⁴¹James Reel, “Darol Anger Divulges His Modern Chop Technique,” *Strings*, no. 119 (May 2004), <http://www.allthingsstrings.com/Technique/VIOLIN/Darol-Anger-Divulges-His-Modern-Chop-Technique> (accessed January 20, 2012). Quoted in Hernandez, “Teaching Turtle Island Quartet Music,” 49.

minimal amount of bow (just one or two millimeters of hair run on the string in the combined movement), which must rest on the string (not bouncing at all).¹⁴²



Figure 4-11. Bow right before being dropped.



Figure 4-12. Bow after hitting the string.

Up-bow: once the bow is set on the string, it is lifted up by a wrist/finger stroke similar to a traditional collé, with the difference that the thumb remains straight. The string must be muffled with the left hand to guarantee the percussive, non-pitched sound (Figure 4-13).



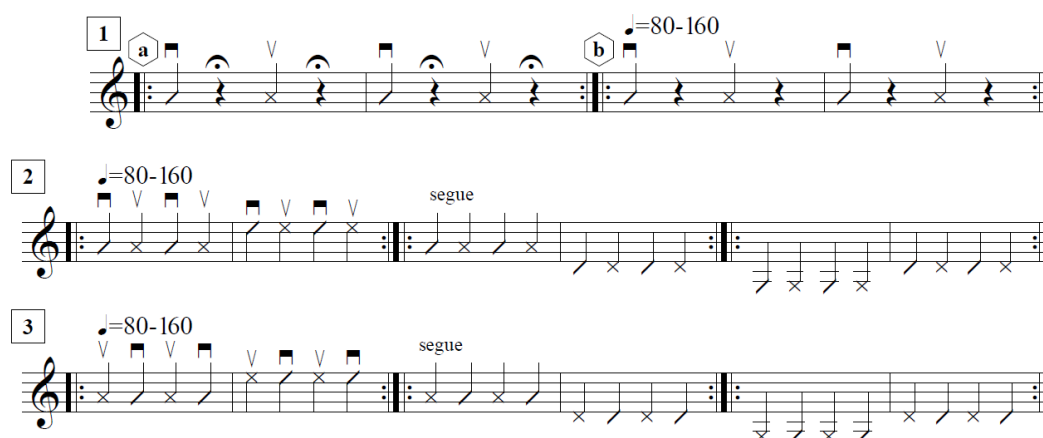
Figure 4-13. Bow after the up bow (collé-like stroke).

As with tango techniques, the notation of the bow chop and its variants is not entirely standardized, since most of its performance practice is improvisatory. The most detailed

¹⁴²Even on the cello, Suzanne Paul advises to use just one or two millimeters of bow. Paul, “How to Chop.”

notation, which will be partially adopted here, is found in an excerpt from Susanne Paul's score "Chop 'till You Drop."¹⁴³ The down-bow chop, or "hard chop," will be represented by a diagonal note-head,¹⁴⁴ while the up-bow is an x-headed note. Example 4-1 is an exercise designed to be first played on the A string, but must be done on the other strings as well, always muffling with the left hand. The notated pitches in these examples represent the string to be played (note A = on A string), and not where to place the fingers, which is up to the performer, but generally recommended at a lower position. Video examples of some of the examples are available by clicking on these links: [exercise no. 1](#)¹⁴⁵ and [exercises no. 2 and no. 3](#)¹⁴⁶

Anticipate mentally each motion before the first attack and during the fermatas (1.a). As the player is more familiar with the stroke, move to a regular slow beat, gradually increasing the speed (1.b). Then, practice on all strings doubling the tempo (no. 2) and inverting the up and down strokes (no. 3).



Example 4-1. Practice exercise to develop basic down- and up-bow chops.

¹⁴³Suzanne Paul, "Chop 'till You Drop (Excerpt)," Accessed January 20, 2018, http://www.groovecello.de/pdf/NB_Howtochop_Vi.pdf.

¹⁴⁴Some arrangements use simply an x-headed note

¹⁴⁵Lourenço De Nardin Budó, *Bow Chops 1* YouTube video. <https://youtu.be/cKUYz3zUnR4>.

¹⁴⁶Lourenço De Nardin Budó, *Down- and Up-Bow Chops Exercises no. 2 and no. 3* YouTube video. <https://youtu.be/w8eEwnnG9WI>.

“Sounded up-bow”: as named by cellist Suzanne Paul, it is basically the same as the up-bow chop, but with regular left-hand finger placement (not muffling the strings).¹⁴⁷ The next exercise (in Example 4-2) is basically a combination of the down-bow chop with the sounded up-bow. Firstly, the down beats are the chops (1.a); secondly, the chops are off beats (1.b). Observe that, since in this case there is a fast alternation between chopped and pitched notes, the down-bow chop notation will accompany the location of the fingers for the sounded up-bows (and not just indicate the string in which to play, as in the previous examples). The sounded up-bows are notated as regular note-headed notes. This example can be viewed through [this link](#).¹⁴⁸

In order to give a hint of jazz to the practice of the stroke, in the next examples the articulations are applied to a typical blue-note scale (no. 2) and an octatonic (or whole-half diminished scale, in jazz terms – no. 3), but instrumentalists may, of course, expand these and develop other exercises as they please (these examples are demonstrated [here](#)).¹⁴⁹

¹⁴⁷Paul, “How to Chop.”

¹⁴⁸Lourenço De Nardin Budó, *Sounded Up-Bow Chop* YouTube video. <https://youtu.be/M5vnPx-7WeQ>

¹⁴⁹Lourenço De Nardin Budó, *Sounded Up-Bow Scale Exercises* YouTube video. <https://youtu.be/ZHL5SL0nE-I>.

1

2

3

Example 4-2. Exercises with the sounded up-bow.

“Slanted chop” and “cyclical slant”: term used by Casey Driessen to refer to a down- or up-bow chop near or at the fingerboard with a more angled bow, meaning that the bow tip is turned close to the player’s head.¹⁵⁰ This is widely used by performers combined with regular down-bow, up-bow, and sounded up-bow chops (as well as with normally played notes and chords). A typical instance of its use can be clearly noticed in a live performance of Turtle Island Quartet piece “Dexteriors,”¹⁵¹ in which Darol Anger on the second violin emulates the drums

¹⁵⁰Casey Driessen, “Chop 102 Cyclical Slant,” Modified April 8, 2014, From Techniques and Skills with Casey Driessen, Series One: The Chop [Mobile], M4V video 7:14, downloaded December 19, 2017, <http://caseydriessen.spinshop.com/>.

¹⁵¹“Dexteriors – Turtle Island String Quartet.” YouTube video, 3:37. Posted by “foxfireman188,” December 23, 2012 <https://youtu.be/VjscB14moVs>.

with the chops at different sounding points. This alternation not only provides tone variety, but may also facilitate a faster stroke.

Driessen demonstrates this applied to a technique he calls *cyclical slant*, which basically consists in a rapid alternation between regular down-up chops and slanted down-up chops. As he says, this sounding point interchange causes the bow to spring back and forth, meaning that when the bow “goes out [towards fingerboard], it wants to spring back to where it started [near the bridge], and when it is here, it wants to spring back to going out.”¹⁵² An important remark is that the bow is not entirely carried back and forth (i.e., the frog and tip do not move parallel to each other), but this motion is like a partial rotation that goes back and forth, pivoted on the balance point (Figure 4-14 and Figure 4-15).¹⁵³ The next [exercise](#)¹⁵⁴ (Example 4-3) is based on Driessen’s demonstrations. Remember to keep the balance point of the bow as the pivot while the bow moves.

¹⁵²Driessen, “Chop 102.”

¹⁵³Driessen, “Chop 102.”

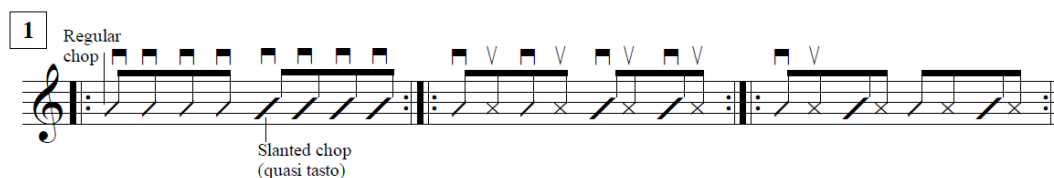
¹⁵⁴Lourenço De Nardin Budó, *Slanted Chop Exercise no. 1* YouTube video.
<https://youtu.be/kG1HAQndggc>.



Figure 4-14. Regular bow chop.



Figure 4-15. Slanted chop.

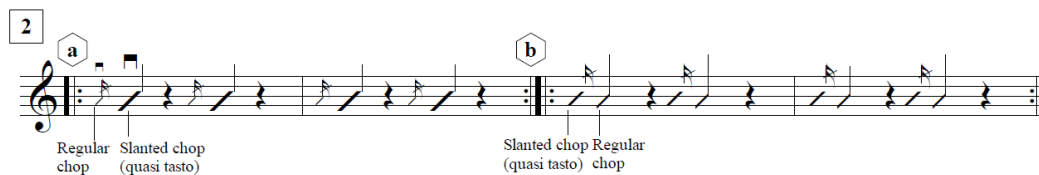


Example 4-3. Slanted chop exercise.

Driessen is able to perform this motion continuously at a spectacular speed, but experimentation shows that internalizing the process and actually performing a virtuosic cyclical slant is not so simple. It is important to reinforce that springiness is a key element. To make it feasible, one can think of the motion as originated from the elasticity of the string and the bow, which make it jump back and forth, while the arm, wrist, and (in this case) especially fingers exert control, although they are not the main propellant.

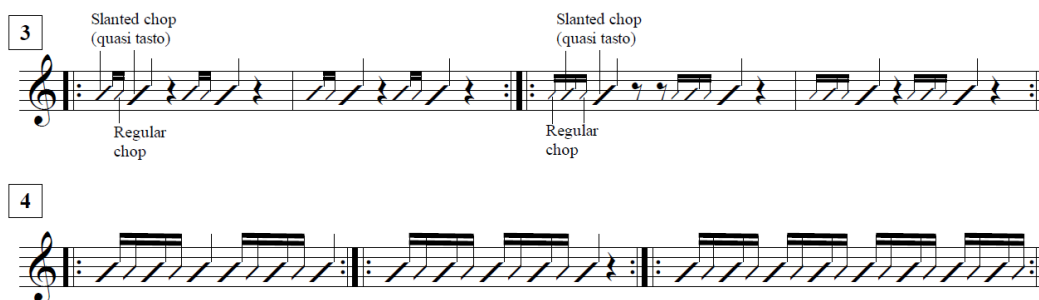
Exercise no. 2 (see Example 4-4) serves to help with developing control over the springiness at the frog. Coming from the air, but close to the string, try to make the bow bounce from a sounding point near the bridge towards the fingerboard and rest on this second place (a); then, the opposite (b). In this gesture, the bow does not need to leave the string, but moves lightly and quickly over it towards the next sounding point after the bounce. Although we may name it a

down bow, the movement is mostly lateral. It is always crucial to avoid tension on the arm-forearm-wrist-fingers system.



Example 4-4. Cyclical slant speed increase exercise.

Once this is internalized, gradually add more strokes (no. 3), until building a four sixteen-note pattern (no. 4). See Example 4-5. A video demonstration is available [here](https://youtu.be/oyotH9R4KR8).¹⁵⁵



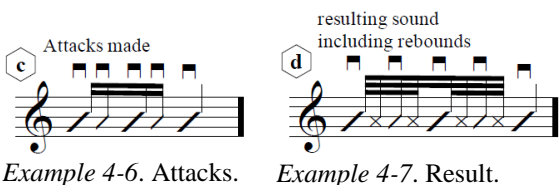
Example 4-5. Cyclical slant speed increase exercise.

While this training is at the beginning, it might be difficult to produce the percussive stroke, but learning to do a light and relaxed alternation between the two sounding points at first must be a priority over the sound result. The sound production depends on the friction, which will decrease the elasticity of the movement. Once the musculature is better developed and one has control over this motion, more weight and bow tilt can be added, increasing the percussiveness. Not less important, this is one of the instances in which having a great deal of rosin near frog is beneficial (if not essential).

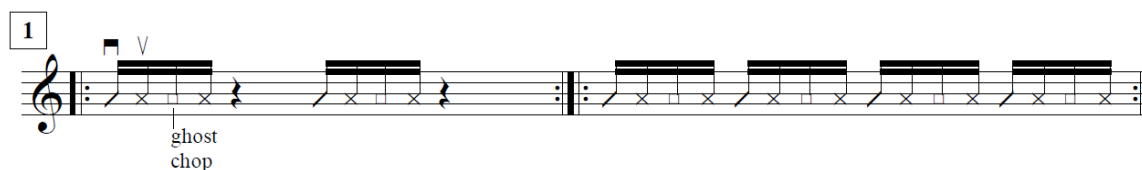
When a good percussive stroke has been established, between each stroke (as notated in the previous example), the rebounded bow traveling from one sounding point to another should also produce a sound analogous to an up-bow chop (previously explained). Thus, the resulting

¹⁵⁵Lourenço De Nardin Budó, *Bow chops – Cyclical Slant* YouTube video. <https://youtu.be/oyotH9R4KR8>.

sound will be a rhythm in fact twice as fast as it is written. The examples below represent this idea.



“Ghost chop”, or “dead note”: Paul’s terms for quiet down-bow chops. These effects are used by her in lines where the off-beats (made by sounded or chopped up-bows) are to be emphasized. It can be thought of as a bow placement (rather than a drop) on the string using the down-bow chop mechanism. In her words, “coming from the air, you basically just lay down the bow onto the string creating a tension and preparation for the next step.”¹⁵⁶ On the violin, it is advisable to do so with the bow less tilted than in an ordinary chop to try and avoid the noise; but at higher speeds, the bow placement ends up producing some light sounds. Paul demonstrates a pattern combining down-bow, up-bow, and ghost chops that is transcribed here as an exercise (Example 4-8, no. 1). The ghost chop is notated here with a square white note-head.¹⁵⁷ An example with sounded up-bows combined is also provided here, within an A Dorian scale (Example 4-9, no. 2). Both are accessible through [this link](#).¹⁵⁸



Example 4-8. Ghost chop exercises.

¹⁵⁶Paul, “How to Chop.”

¹⁵⁷Paul actually uses a diamond note-heads for this in her pieces, such as “Chop ‘till You Drop,” but in order to avoid confusion with the notation of harmonics, the squares have been adopted. Suzanne Paul, “Chop ‘till You Drop (Excerpt),” Accessed January 20, 2018, http://www.groovecello.de/pdf/NB_Howtochop_Vi.pdf.

¹⁵⁸Lourenço De Nardin Budó, *Bow Chops - Ghost Chops Exercises nos. 1 and 2* YouTube video. <https://youtu.be/Ta3S49I9iKs>.



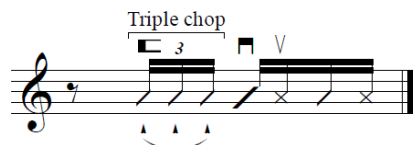
Example 4-9. Ghost chops exercises.

Triple chop: essentially a short and percussive ricochet stroke, which is done near the frog and with a lateral bowing (i.e., accompanying the direction of the string), in this case from the fingerboard towards the bridge. Like in a typical ricochet, looseness and control must be very well managed. It is a wrist-based motion and, as Driessen suggests, it can be thought of as a fast “sweeping” motion towards the bridge (this is illustrated in Figure 4-16).¹⁵⁹ One must experiment with speed and at different distances from the string, but it is a generally small gesture, especially if it is desired in a fast passage. Like the cyclical slant, this technique requires a very well rosined bow too. The resulting figure is a fast triplet with an accent in the first attack. A rotated down-bow mark has been employed to represent the lateral bowing towards the bridge (Example 4-10).



Figure 4-16. Bow landing on the string with a movement towards the bridge.

¹⁵⁹Casey Driessen, “Triple Chop,” Modified April 8, 2014, From *Techniques and Skills with Casey Driessen, Series One: The Chop [Mobile]*. M4V video 7:55, Downloaded December 19, 2017, <http://caseydriessen.spinshop.com/>.



Example 4-10. Triple chop representation.

Example 4-11 is a series of exercises for the development of this effect: firstly, isolated (no. 1); then, combined with other strokes (no. 2). In the first, slowly perform a “sweeping” motion (1.a) with the wrist, by bringing the bow near to the bridge and tilting it (with the hair towards the bridge and the wood towards fingerboard – the opposite way normally used in bow chops). Speed up and let the bow bounce a bit (1.b), balancing looseness and control, until adding more weight and percussiveness, resulting in a ricochet (1.c). Driessen compares such bouncing motion with a landing airplane tire hitting the ground.¹⁶⁰ Do a similar procedure in no. 2, which includes the slanted and the up-bow chops as well. The exercises here must be also applied to the other strings. A demonstration can be viewed through [this link](#).¹⁶¹

1

$\text{♩} = 60-80$ $\text{♩} = 80-100$ $\text{♩} = 100-160$

p *mf* *f*

lightly "sweeping" adding articulations short ricochet

2

Example 4-11. Triple chop exercises.

To develop a “groovy” and “inside the beat” feeling, Casey Driessen proposes another exercise (Example 4-12, no. 3), which he advises to practice with the metronome set on the off beats (beats 2 and 4), and a pattern (no. 4),¹⁶² both transcribed here as follows:

¹⁶⁰Driessen, “Triple Chop.”

¹⁶¹Lourenço De Nardin Budó, *Bow Chops - Triple Chop Exercises nos. 1, 2, and 3* YouTube video. <https://youtu.be/1VFLjY1hVqI>.

¹⁶²Driessen, “Triple Chop.”

3 ♩=80 (set metronome on off beats)

4

Example 4-12. Driessen's triple chop patterns.

The bow chops are an interesting means to a percussive treatment of the violin that does not involve any action that can produce harm to the instrument. However, again, if this is a novel bowing approach for the performer, its practice must be cautious. The change in bow grip and tilt will demand that different muscles on the thumb, arm, and shoulder come into play, and they need to be trained carefully. The lack of visible activity by the arm and shoulder (as the stroke is mainly produced with the wrist and fingers motion) can lead to stiffness there. It can be damaging to exaggerate on the practice or performance of such technique at first, thus, as Paul Huppert highlights, one must work firstly “on muscle memory and endurance.”¹⁶³ Short practice sessions with gradual frequency increase during a week are advised.

¹⁶³Huppert, “THE CHOP.”

CHAPTER 5

MINOR THIRD HARMONICS IN SALVATORE SCIARRINO'S CAPRICE 5

Different from other techniques and composers shown here, the harmonics and other techniques in Salvatore Sciarrino's caprices are often a topic of discussion in extended technique surveys. For instance, Strange and Strange¹⁶⁴ mention his use of the *spazzolato*¹⁶⁵ bowing on the third caprice, while Sekulić¹⁶⁶ addresses his odd use of trills in harmonics in the fourth, and the percussive left-hand finger dropping on the sixth. Irvine Arditti, a great advocate of contemporary violin music (who has recorded the caprices and other pieces by Sciarrino), discusses even more issues regarding all six caprices, including the matter of the minor third harmonics, with some performance advice, but not as thoroughly as we will see here. Since the fifth caprice is the one that most prominently displays this type of harmonic, this study will be limited to this piece.

At what pitch does it sound?

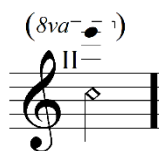
Absolutely uncommon (if not unprecedented) in the traditional violin repertoire, minor third harmonics are not so often taught, practiced, or even thought about in violin playing, thus,

¹⁶⁴Strange and Strange, *The Contemporary Violin*, 38.

¹⁶⁵Sciarrino's instructions to this technique are: "Alternating quickly the positions indicated - Fingerboard and Bridge -, 'brush' the strings with the hair (at the tip, almost without rolling and without bow pressure)." Salvatore Sciarrino, *Sei Capricci per Violino* (Roma: Ricordi, 1976), 6. My translation. Originally: "*Alternando rapidamente le posizioni indicate – Tasto e Ponticello –, 'Spazzolare' le corde com i crini (ala punta, quase senza scorrimento e senza pressione d'arco).*"

¹⁶⁶Sekulić, "Do You Hear Me?," 27, 46.

some theoretical and practical insights are provided in this review. A minor third natural harmonic is conventionally the sixth partial harmonic, therefore playable (at least in theory) on its corresponding nodes (at each sixth division of the string). In Example 5-1, this node (near the notated C5) played on A string should generate an E7. However, what one will notice when practicing this is the fact that such a minor third is considerably wide; i.e., if the finger completely stops the string on that node it will result in a C higher than, for instance, an equally tempered C.



Example 5-1. Natural minor-third harmonic on A string.

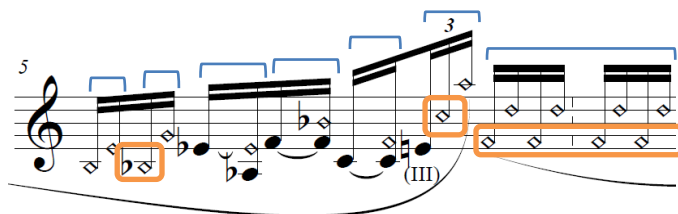
Of course, violin intonation is usually founded in compromises between different tuning systems rather than a single system. In practice, for example, if a C5 were to be normally played (not as a harmonic) in tune with the violin open G string¹⁶⁷ (observing Pythagorean intonation), the finger would fall considerably lower than the sixth harmonic node, being actually closer to the seventh harmonic (in this case, producing a very flat G7). Nonetheless (taking the just intonation major third as a parameter), that C played in tune with the open E (or open A) string must be higher, and this location is closer to the sixth harmonic. This is demonstrated in [this video](#).¹⁶⁸

Although Sciarrino does not include details regarding intonation, the choice of the sixth harmonic may be considered the correct one in this caprice once we assume that it is structured in motives that are created with groups of the same pitch-classes written in different places on

¹⁶⁷Intonation preferred for scale practice, as suggested by Simon Fischer. Simon Fischer, *Scales and Scale Studies for the Violin* (Peters, London: 2012), 1

¹⁶⁸Lourenço De Nardin Budó, *Harmonic Nodes Locations according to Different Tuning Systems* YouTube video. https://youtu.be/BZohwA4G_ZM.

the instrument. In Example 5-2, each of the notes under a single bracket presumably represent the same pitch class, sometimes varying in register. Thus, the highlighted natural harmonics notated as B-flat, C, and F must be performed on the sixth harmonic node (the just tuned minor third) respectively on the G, A, and D strings (and not on the seventh node – a Pythagorean minor third), in order to sound the same pitch as the notes right next to (after) them.



Example 5-2. Salvatore Sciarrino, Caprice no. 5, m. 5.

The seventh partial, playable on what is considered a narrow, or “Pythagorean,” minor third harmonic, is of course a possibility on the instrument; but it is often disregarded,¹⁶⁹ probably because of its exaggeratedly low resulting pitch (when compared to twelve-tone equal temperament, to which most of us are nowadays accustomed). Another issue is that, when performed on the lowest part of the fingerboard, it is too close to other harmonic nodes, so, even when acknowledged as a possibility on the instrument, the seventh partial is notated elsewhere. Arditti and Platz¹⁷⁰ and Strange and Strange¹⁷¹ suggest performing it at two sevenths of the string, which would be the next node, or the diminished fifth (in the case of the G string, it would be almost at the D-flat⁴ – in fact, a bit more than an eighth-tone lower than that – and result in a flat F⁶). Arditti and Platz also point out that the composer Stefano Scodanibbio uses this harmonic extensively in works like *My New Address* for solo violin, notating it on the node

¹⁶⁹Paul Zukofsky, who designed a detailed chart of how to produce all the possibilities of natural and artificial harmonics in *Perspectives of New Music*, does not include this possibility. Quoted in Strange and Strange, *The Contemporary Violin*, 122-125.

¹⁷⁰Arditti and Platz, *Techniques of Violin Playing*, 61.

¹⁷¹Strange and Strange, *The Contemporary Violin*, 117.

The image displays three staves of musical notation, labeled D, E, and F, representing a continuation of Example 5-4. Each staff is in treble clef and contains various musical fragments with specific fingerings and techniques indicated.

- Staff D:** Starts with a 4-fingered chord (IV), followed by a 4-fingered chord (III) marked "simile". It then shows a 2-fingered chord (II) and a 1-fingered chord (I).
- Staff E:** Contains a sequence of chords and techniques: IV (4-fingered), III (4-fingered), IV (4-fingered), III (4-fingered), II (4-fingered), III (4-fingered), II (4-fingered), I (4-fingered), II (4-fingered), I (4-fingered), and I (4-fingered). The word "simile" is used between the first and second measures.
- Staff F:** Starts with a 4-fingered chord (IV), followed by a 3-fingered chord (III) marked "simile". It then shows a 2-fingered chord (II) and a 1-fingered chord (I). The word "simile" is used between the first and second measures.
- Staff G:** Starts with a 4-fingered chord (IV), followed by a 3-fingered chord (III) marked "simile". It then shows a 2-fingered chord (II) and a 1-fingered chord (I). The word "simile" is used between the first and second measures. The notation includes a "Seagull Gliss." marking.

Example 5-4. (Continued)

It is important to observe that over the course of the whole piece a great variety of combinations of these fragments are made in a very fast tempo ("presto"); therefore, the fragments can be combined with each other as a preliminary exercise for learning the caprice itself. The caprice for harmonics ("Scherzinho – caprice paraphrasing Sciarrino's 5th" – composed as part of this document and included in Appendix 3) can be used as an entry level to the world of Sciarrino's sonority.

Expanding the Technique: Artificial Minor Third Harmonics

Sciarrino has only explored natural minor third harmonics in this piece, but minor third harmonics are also possible with a stopped finger, i.e. artificially. Example 5-5 represents the harmonic series over the note E4 on D string up until the minor third harmonic, or sixth partial. Note that the octave harmonic in first position (in parenthesis) is rather unreasonable for performance.

The image shows two staves of music. The top staff, labeled 'Resulting pitches', shows a sequence of six notes: D4, E4, F#4, G4, A4, and B4. The bottom staff, labeled 'Performed', shows the same sequence of notes but with a dashed line above the first three notes labeled 'III'. An asterisk symbol is placed above the fourth note, labeled '*m3 artificial harmonic'.

Example 5-5. Reaching an artificial minor third harmonic on D string.

Although a relatively unstable way of producing notes that can be played as natural or perfect fourth artificial harmonics, this procedure can bring a new color to such frequencies and is also a very effective way to play a slurred arpeggiated motive such as in the first measure of Example 5-6. The same harmonics can be produced in a more traditional fashion, as written in the second measure, but it is considerably simpler to play as the first.

The image shows two staves of music. The top staff, labeled 'Resulting pitches', shows a sequence of six notes: D4, E4, F#4, G4, A4, and B4. The bottom staff, labeled 'Performed', shows the same sequence of notes but with a dashed line above the first three notes labeled 'III'. An asterisk symbol is placed above the fourth note, labeled '*m3 artificial harmonic'.

Example 5-6. Arpeggiated gestures with harmonics.

The next exercises (see Example 5-7 – demonstrated [here](https://youtu.be/8gC7Uy7kdIc))¹⁷⁵ are to develop artificial minor third harmonics in combination with perfect fourth and major third harmonics, as well as the natural versions of those harmonics. Again, trying other variants and fingerings is encouraged. As previously mentioned, the caprice for harmonics composed as part of this document explores the minor third artificial harmonic as well.

¹⁷⁵ Lourenço De Nardin Budó, *Artificial Minor Third Harmonic* YouTube video. <https://youtu.be/8gC7Uy7kdIc>.

1

Resulting pitches

Exercise 1 consists of two staves. The top staff is in treble clef and contains two measures of music, each with a triplet of eighth notes. The bottom staff is in bass clef and also contains two measures of music, each with a triplet of eighth notes. Fingerings are indicated by numbers 0, 1, 2, 3, 4 below the notes. The first measure of the top staff has fingerings 4, 0, 1, 2. The second measure has fingerings 3, 3, 3, 3. The first measure of the bottom staff has fingerings 3, 0, 1, 1. The second measure has fingerings 3, 3, 3, 3.

2

Exercise 2 consists of two staves. The top staff is in treble clef and contains two measures of music, each with a triplet of eighth notes. The bottom staff is in bass clef and also contains two measures of music, each with a triplet of eighth notes. Fingerings are indicated by numbers 0, 1, 2, 3, 4 below the notes. The first measure of the top staff has fingerings 4, 3, 3, 4. The second measure has fingerings 3, 3, 3, 3. The first measure of the bottom staff has fingerings 3, 0, 1, 2. The second measure has fingerings 3, 3, 3, 3.

Example 5-7. Artificial minor third harmonics exercises.

Why More Harmonics?

Even after four decades, the odd virtuosity of Sciarrino's caprices can be intimidating to a traditionalist ear. Nonetheless, the promotion of a new universe of sonority and seeing the evolution of the violin technique is fascinating. The study presented here is a step into demystifying it and working for the progress of this instrument. If nowadays several ways of playing harmonics is a requirement to any performer, we must not ignore the fact that some of our most important predecessors in violin teaching have considered that the artificial harmonics or "flageolet-tones" and should be rejected as they sound "unnatural." Leopold Mozart's treatise from mid eighteenth-century advocates that

When the perpetual intermingling of the so-called flageolet is added [in violin playing], there ensues a really laughable kind of music With such performances those who associate with Carnival merry-makers would distinguish themselves excellently. He, who wishes to make a flageolet heard on the violin, will do well to write his own Concerto or Solo thereon, and not to mix them with the natural violin tone."¹⁷⁶

¹⁷⁶Leopold Mozart, *A Treatise on the Fundamental Principles of Violin Playing*. Editha Knoch, trans. Early Music Series 6. 2nd ed. (New York: Oxford University Press, 1985), 101.

One century later, Spohr claimed that “to play entire melodies in these strange, heterogeneous tones, is to degrade a noble instrument,”¹⁷⁷ and that

Although in recent times the famous Paganini revived the antiquated and almost forgotten art of harmonic-playing, and created a great sensation by his extraordinary skill, and however seductive such an example may be, still I would earnestly counsel all young violinists not to waste their time in this study, to the neglect of what is more important. Indeed, even if harmonic playing were really a gain to Art, and such an enrichment of the resources of the violin as good taste could approve, it would still be bought too dearly at the expense of breadth and sonority of tone, with which it is incompatible, as the artificial harmonics can only be produced on thin strings, from which a full tone can never be obtained.¹⁷⁸

While we know that they are usually talking about a specific range of repertoire and way of playing (and must understand the historical context of those publications), the fact is that their advice has been widely ignored by composers and instrumentalists since at least the late Romantic period. Consequently, pedagogues have adapted to the demand for harmonic playing in the twentieth century. Leopold Auer discusses both artificial and double-stopped harmonics in *Violin Playing as I Teach It* (less than a century after the first publication of Spohr’s method), admitting that the harmonics are a complicated training, but affirming that “the student who wishes to become a real virtuoso must resign himself to undertaking – and mastering – it in order to attain his goal.”¹⁷⁹ Likewise, Carl Flesch included in *The Art of Violin Playing* detailed guidelines for playing artificial harmonics, with musical examples from Paganini and Tchaikovsky.¹⁸⁰ Flesch also included practice exercises for harmonics in his famous scale system (a supplement to his treatise) writing in the preface: “At the end of each scale succession, I have

¹⁷⁷Louis Spohr, *Violin School*, (London: Bosen et. Co., 1878), 97.

¹⁷⁸Spohr, *Violin School*, 97.

¹⁷⁹Leopold Auer, *Violin Playing as I Teach It*, (New York: Frederick A Stokes Company, 1921), 136.

¹⁸⁰Flesch, Carl. *The Art of Violin Playing – Book One: Technique in General and Applied Technique* (Chicago: Carl Fischer Inc., 1924).

added a few exercises in single and several in double-stop harmonics, for the reason that many violinists neglect this form of technic and are likely to be embarrassed, if their repertoire should by chance force them to employ harmonics.”¹⁸¹

This last quote by Flesch already reveals a great contrast with the ideas of Mozart and Spohr, and he was not even discussing the avant-garde trends that followed in the twentieth century. This is evidence of how violin playing rapidly evolved during the Romantic era and that we have only arrived in the stage of technical development that we are because at some point in the history dogmatic traditionalism was surpassed by open-mindedness.

¹⁸¹Carl Flesch, *Scale System: Scale Exercises in All Major and Minor Keys for Daily Study* (New York: Fischer, 2000), iii.

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APPENDIX A

COMPILATION OF PRACTICE EXERCISES

Chicharra/lija:

Behind the bridge, on the middle of the D string cover thread

(Middle (V))

finish at frog

Frog

finish at middle

*Hold firmly, avoiding tension in the arm, for a while without moving the bow. Let the bow slip with the weight, releasing percussive pops - "Modern son filé" technique.

**Like a staccato alla corda with over pressure.

*** long note with chicharra timbre.

Chicharra

1

2

3

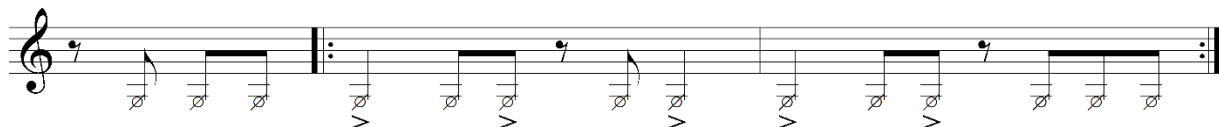
4

5

Tambor:

On G string:

1

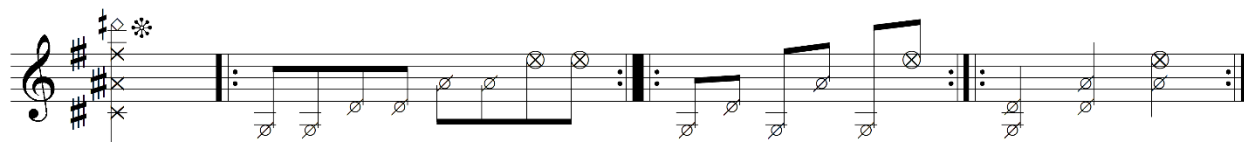


2



Combining other strings:

- * Touching the strings at these approximate pitches, avoiding harmonic nodes:
- G, D, and A with the finger nails;
 - E with fingertip, but without stopping it.
 - it is not a problem if a finger slightly touches more than one string



From this measure on, the notes only mean the strings to be played, keeping the finger pattern showed in the first measure



Triplet/Banjo Pizzicato



Miscellaneous Tango Techniques:

Transcription of violin part from the third movement of “Concierto para Quinteto,” recorded by Piazzolla’s *Nuevo Tango* quintet.

The musical score is written for a violin in 4/4 time. It consists of three staves. The first staff features several technical markings: 'Látigo' (whip) above a series of sixteenth notes, 'pizz.' (pizzicato) above a quarter note, 'ord. arco' (order of bow) above a quarter note, and 'Tambor pizz.' (drum pizzicato) above a quarter note. The second staff continues the melodic line with various note values and rests. The third staff includes a 'Chicharra' (rattle) marking above a series of eighth notes, followed by a rhythmic pattern of eighth notes and rests.

Bow Chops:

Down- and up-bow:

The musical score for bow chops consists of three examples, each in 4/4 time. Example 1 is marked with a box containing the number '1' and a diamond containing 'a'. It shows a sequence of down-bow (V) and up-bow (x) strokes. Example 2 is marked with a box containing the number '2' and a tempo indication of 80-160. It shows a sequence of down-bow and up-bow strokes, followed by a 'segue' marking. Example 3 is marked with a box containing the number '3' and a tempo indication of 80-160. It shows a sequence of down-bow and up-bow strokes, followed by a 'segue' marking.

Sounded Up-bow:

1

2

3

Slanted Chop:

1

Regular chop

Slanted chop (quasi tasto)

Cyclical Slant:

1

Regular chop Slanted chop (quasi tasto)

Slanted chop (quasi tasto) Regular chop

2

Slanted chop (quasi tasto)

Regular chop

Slanted chop (quasi tasto)

Regular chop

3

Ghost Chop

1

ghost chop

2

ghost chop

Triple Chop:

1 $\text{♩} = 60-80$ $\text{♩} = 80-100$ $\text{♩} = 100-160$

p lightly "sweeping" *mf* adding articulations *f* short ricochet

2

3 $\text{♩} = 80$ (set metronome on off beats)

4

Minor-Third Harmonics

Natural Harmonics Exercise:

* The "minor third" harmonics, must produce the sixth partial, so they are to be considered "wide" minor thirds, as in just intonation.

resulting
pitches

1

performed

IV

IV III

8

2

III II

8

III 1 3 2 3
2 3 2 3

1 4 2 4 3
2 4 2 4 3

8

3 3 3 3 3 3

II I

II 4 4 3 2 2 1
4 4 2 1 2 1

2 3 3 4 3 2
1 2 2 3 3 2

2 1 3 2
1 2

8

II 1 3 2 3
2 3 2 3

1 4 2 4 3
2 4 2 4 3

8

3 3 3 3 3 3

4

I 0 4 4 3 2 2 1
4 4 2 1 2 1

2 2 3 4 3 2
1 2 2 3 3 2

1 3 2 3
2 3 2 3

1 4 2 4 3
2 4 2 4 3

Artificial Harmonics Exercise:

1

Resulting pitches

The image displays a musical exercise for artificial harmonics, organized into four systems. Each system consists of two staves. The top staff of each system shows the 'Resulting pitches' in a treble clef, featuring a sequence of eighth notes with slurs and triplets. The bottom staff shows the corresponding fingerings and positions on a string, with notes marked with diamond symbols. Each system is labeled with a Roman numeral (IV, III, II, I) and includes a diagram of a four-fingered hand (0, 1, 2, 3) with a dashed line indicating the harmonic position. The exercise is divided into two main sections by a double bar line, each containing two systems. The first section (IV, III) is in a key with one flat (B-flat), and the second section (II, I) is in a key with two sharps (F-sharp and C-sharp). The fingerings for the resulting pitches are consistently 3, 3, 3, 3 across all systems.

IV

III

II

I

2

IV

4 3 3 4 3 2 4 3 2

1 3 0 1 2 0 1 2

3 3 3 3 3 3 3 3

3 2 2 3 0 1 1

III

4 3 3 4 3 2 4 3 2

1 3 0 1 2 0 1 2

3 3 3 3 3 3 3 3

3 2 2 3 0 1 1

II

4 3 3 4 3 2 4 3 2

1 3 0 1 2 0 1 2

3 3 3 3 3 3 3 3

3 2 2 3 0 1 1

I

4 3 3 4 3 2 4 3 2

1 3 0 1 2 0 1 2

3 3 3 3 3 3 3 3

3 2 2 3 0 1 1

Glossary of Same Pitch-Class Motives in Sciarrino's Caprice no. 5:

A

B

C

D

E

F

G

Seagull
Gliss.

APPENDIX B

EXPERIMENTAL CAPRICES

A Miniature

Lourenço De Nardin Budó

marcato 0 III IV- - - - - 0 III 0 0

ff s.p. s.t. ord. s.p. ord. mf

molto agitato

IV 3 s.t. s.p. s.t. s.p. p ord. f ord.

tranquilo

mf 2 III

9

11 IV 3 III 2 3 0

p s.t. s.p. ord.

2018

Caprice for "cuíca" effects

Lourenço De Nardin Budó

with violin laid on lap or table

placing violin into playing position

vamp

rosin hair

pizz. hair

I
II
III
IV

IV

LH RH LH

pizz. strings

cuíca

simile

simile

cuíca

Performance Instructions

1. Tie a bow hair on the G string, near the end of the fingerboard (more than one may be tied for precaution).
2. Quadrangular note-heads indicate a sound to be generated with the piece of hair:
 - the main cuíca sound, made by the friction of the fingers passing on the well-rosined hair;
 - pizzicato on the hair;
 - rosining the hair (it must be thoroughly rosined, until it is possible to make a clear sound with this action)
3. Circled round note-heads indicate pizzicato on the strings with the hair touching (and dampening) them:
 - while holding hair with the RH, perform pizz. with the LH (and vice versa).
 - after the pizz. with RH, hold back the hair with this hand in the starting position for the cuíca, i. e. near the instrument.
4. The final cuíca chord is performed with the hair touching all the strings, as in the dampened pizz.
5. Rhythm and dynamics are free.
6. Of course, all sounds must be made with the hair straightened. That means, when placing the instrument on the playing position in second measure, it has to be straightened and plucked by RH fingers.

Scherzinho

Caprice paraphrasing Sciarrino's 5th

Lourenço De Nardin Budó

Scherzando, ma tranquillo

5

9

13

17

21 **Fine**

25 *agitato*
f

29

33 *mf* *dim.*

37 *sul G*
"seagull" gliss *mf* "seagull" gliss *f* **D.C. al Fine**

Só Tocando (Only Touching)

caprice for muffled/percussive effects

PERFORMANCE INSTRUCTIONS

The entire caprice is to be performed by only touching the strings with the left hand, without normally pressing them or using harmonics - i.e. preventing normal resonance of the strings. The different symbols mean different types of touch or articulation:

MUFFLING

- ◆ - Black-diamond-heads: play nearly the notated pitches with finger pressure between normal stopping and harmonic pressure - the graphic notation is to be performed with this effect as well;
- ▲ - Triangle-head: highest possible pitch (in a determined string) - also with a muffled sound in this case;
- ⊗ - X-circled-heads: basically the same as the black diamonds, but in this case the notated pitches serve only to indicate the string in which to play (observe that only E, A, D, and G are represented in most of the caprice);
- The violin drawings with an arrow are to point out the approximate region on the fingerboard to be touched with the x-circled-heads when specification is needed. Otherwise, this is up to the performer.



TAMBOR

- ∅ - Slashed-circle-heads: "tambor" pizzicato, performed with the LH fingernails touching the strings - those never happen on E string;
- Tambor grace-notes: a fast roll, plucking with RH third-second-first fingers in a row;
- LH pizz. tambor: touching the string with the second and/or third fingernail, pluck the string with the first like a finger flick).



BOW CHOPS

- / - small-slashed-head: simple bow chop, to be played muffling the strings as well;
- ↘ - large-slashed-head: "slanted" chop. Same as the previous, but with a more inclined bow and closer to the fingerboard. Always on the A string;
- × - x-heads: up bow chop, done from the string as a collé.

Só Tocando (Only Touching)

caprice for muffled/percussive effects

Lourenço De Nardin Budó

Freely *f* *pizz.* *p* *rit.*

arco IV *mf* *pizz.* *mf* *rit.*

arco IV 12 *p* *f* *p* *arco*

19 *p* *f* *pizz.* *arco*

20 *p* *fff* *p* *f* *pizz.* 3

arco 24 *etc.*

25 *agitato* *calmo pizz.* 3 *arco* *groovy* *calando pizz.*

29 *arco* *poco a poco cresc. ed accel.* *LH pizz.* *Vamp* *molto cresc. ed accel.*