According to the philosopher Alfred North Whitehead, “the rhythms of education are in three stages: romance, precision, and generalization.” Studies of successful performers have shown that many of them have been taught by a succession of teachers who embody these three stages. The beginning teacher nurtures the romance of the instrument and the joy of music; the second teacher is the technician who helps to build technique and instill discipline; the third teacher is the artist-teacher who is able to inspire the student to artistic heights and may act as a coach and inspiration, rather than as a strict pedagogue.

This article will focus on the pedagogy for intermediate level students. The term “intermediate student” here means a young cellist who has played for a few years, perhaps having started in a public school program. The student may be playing through fourth position but is motivated to become a better player, requiring individual attention. He or she is probably not very clear-thinking about what he or she is doing technically and has not been exposed to the kind of self-discipline required for playing on a higher level.

The studio teacher for this level of student is responsible for establishing a good technical and musical foundation for the developing string player. This role includes providing a thorough understanding of left-hand and right-hand techniques, building good work habits, instilling self discipline, and expecting consistency. The goal of creating a secure technical and musical foundation is achieved through a healthy diet of scales and arpeggios, exercises, etudes, and a gradual journey through the literature.

The intermediate level teacher must set high standards and have a clear understanding of how to teach all aspects of technique.

Effective string teachers for the intermediate-level student must be far more than just good players on their instruments. They have to be good communicators who understand the learning process and are aware of how the brain works. They also recognize different personalities and various styles of learning. Effective teachers must have a well organized pedagogical system that works, including good materials and clear sequencing. They have to balance the right amount of technique and repertoire, as well as the big picture and the small picture. Good teachers have to be well organized with short- and long-term goals for the student and help to plan week to week and month to month, as well as organizing recitals, competitions, auditions, etc. They have to set standards for the students and help them to establish a code of self-discipline. They also have to be very patient and help the students deal with the inevitable frustrations that they encounter when learning something as complex as playing a string instrument. And, sometimes, they need to be counselors for their students. In short, they should be psychologists, physiologists, sociologists, and philosophers in addition to the obvious—being experts on instrument technique and literature, and competent in musicology and music theory.

There is so much material for a young musician to learn, and if the intermediate level teacher is not well organized then some important material may be left out or forgotten. Figure one (see page 33: A Global Syllabus for a Musician) is a partial list of some of the many topics which must be addressed by the teacher of the intermediate level student. These include technical, musical, organizational, and general musicianship issues. On the technical side, this involves a good foundation of basic issues such as the best
placement of the instrument, the bow hold, and an understanding of the geography of the left hand. Beyond that, it includes the development of balance, strength, endurance, efficiency, relaxation, etc. Specific issues for each hand must be addressed: right hand, (tone production, string crossings, all the different bow strokes, etc) and left hand, (intonation, vibrato, articulation, etc). On the musical side, the effective teacher must work with the student on issues such as phrasing, using rhythm to enhance expression, style, and performance practice. Nothing can be taken for granted—the effective teacher cannot assume that even the most “obvious” issues have been discussed by past teachers or understood by the student.

On the organizational side, teachers need to make sure that the student knows how to practice, how to prepare for a performance, and how to work with an accompanist, and other things. In addition, intermediate students need to be exposed to the important building blocks of music in order for them to truly understand what they are playing and to prepare them to make good musical decisions as mature artists. They must have a basic understanding of music theory and history, as well as an understanding of form analysis and, at least, rudimentary piano skills. And beyond all of these things, the intermediate teacher must help the budding artist begin to develop a musical “philosophy” based on their knowledge of the world and their own life experiences.

So, how is this all possible? How can a teacher cover all the necessary material in the short amount of time that they work with a student? Every teacher has their own style of teaching, and most teachers will work differently with different students. In addition, everyone has their own approach to pedagogy and technique. Nevertheless, the material should be covered in some kind of logical, sequential, and consequential manner which may differ from teacher to teacher. Ultimately it is the responsibility of the teacher to cover all this material in one way or another.

Since it is the responsibility of the teacher to cover all this material, the teacher must be organized and efficient with the use of lesson time. Too often string teachers fall into something that I call “random teaching,” with no sense of a “grand plan” in taking the students through what they need in a particular lesson and throughout the year. There is certainly a place for the kind of improvisational teaching in which a teacher reacts to the moment or works on what the student wants to do rather than leading them in a well thought out and logical approach. This may occur in a one-time master class situation, or if a student comes for a sample lesson, or occasionally as the need or situation warrants. But if a teacher is responsible for the growth of a student for a period of time, it is important to have a clearly thought out plan for that student. “Random teaching” may result in important material never being covered.

We expect our students to be disciplined and practice efficiently and effectively, but, similarly, we have to be disciplined in how we best use our time with the student in the lesson. Since most students come just once a week for an hour, it is vital that it is used to the fullest.

In order to help organize the lesson time, I generally divide my lessons into four parts:

I. scales and arpeggios
II. exercises
III. etudes
IV. repertoire

At the beginning of each semester, I spend more time on the first two parts of the lesson. However, I make sure that I spend at least some time on each of these four parts in every lesson. If I neglect to touch any of these items in a lesson, then the students will assume that they do not need to spend their time on these in their practicing. If they know that the scales and exercises have a high priority in the lesson, then they will make sure that they come in prepared. As the semester progresses, I spend more time on the etudes and pieces. Since intermediate level students generally prefer to work more on their repertoire, I need to send them a strong message about the importance of scales and exercises by letting them know that we will always begin the lesson with these.

I find that the consistency of this plan is actually comforting to the students. There is no discussion about what to start with for the lesson—they begin with scales and exercises and then feel ready to tackle etudes and pieces. So, there are no “surprises” at the beginning of a lesson. It is a regular routine. There is even a little ritual in which I move the music stand away as they tune, so that when they “perform” the scale and arpeggio, there is nothing to hide behind. They become accustomed to this and feel less anxious when they are performing other music by memory without anything between them and the audience. The regularity of this routine feels as normal as brushing one’s teeth in the morning.

The purpose of each of these four parts of the lesson should be quite obvious. Intermediate students need to have a solid grounding in the basic building blocks of music: scales and arpeggios. They need to know multiple different scale fingerings and scale systems. Once they have “mastered” all of the keys in one scale system, from memory with good intonation, they should then move on to another system that gives different options. I prefer to focus on one key per week for the scale and associated arpeggios. In this way, the student can explore in depth the vagaries of that key by solidifying the intonation, exploring bow contact point issues associated with particular notes in the key, and stabilizing shifts for several days in succession. Therefore, it should take 12 weeks to get through one system if the student brings in one key each week.

I have collected dozens of different systems of scales and arpeggios. These include the standard two, three and four octave systems, universal fingering systems, scales up one string, speed scales, systems by Galamian, Feuilliard, Krastev and others, plus many alternate systems. Figure two (see page 33: Sequential Approach to Scales and Arpeggios) is a chart of the main scale systems that I use in sequence during the first several years of work with an intermediate level student. Depending on how long a student studies with me they will get through many different scale systems, offering them options to choose from when working out fingerings in a piece. It also greatly helps in sight reading when a musician can see the patterns and quickly choose the best fingering solution from an arsenal of choices.

Exercises help to focus attention on one specific aspect of the technique. It is work on the molecular level of the technical and musical universe. The teacher of the intermediate level student needs to have a large bag filled with exercises that can address both fundamental and sophisticated issues related to shifting, vibrato, articulation, trills, etc.

Etudes build on the micro-technique of the exercises. They begin to put the discrete techniques together into a musical shape and should be approached both technically and musically.

The last part of the lesson deals with the repertoire. I spend longer on this as students advance because building repertoire...
becomes more important as the student gets older. Repertoire is necessary for auditions, competitions, and recitals. However, I believe that it is a pedagogical mistake to spend too much time on repertoire before the student is ready. A student should have the tools required to learn new pieces of music easily. An important rule for me is that the repertoire that a student plays should be easier than the technique that they can master. That is not to say that there won’t be special challenges in a particular piece, but a student should not have to concentrate so much on the technique that the tone or musicality suffers as a result.

In order to squeeze as much as possible into the lessons, I have found that it is helpful to use the following procedures to help keep me and my students organized:

1) The students have an assignment notebook where I write down what they should prepare for the next lesson. I usually do not write down detailed information, just the bare bones of the assignment. However, sometimes during the lesson, I will hand the notebook to the student in order for them to write down details about what we discuss, which helps their memory. The notebook also helps me remember the assignment from the previous week and ensures that there are no misunderstandings about the expectations.

2) I often request that a student keep a practice chart with the categories of what and when: What they practiced (e.g. scales, exercises) and when indicating the amount of time for each activity. This helps me evaluate their time usage at home and is a useful starting point for a discussion about practicing. Once the student understands the basic principles of good practicing, I do not ask for these charts anymore. The most extreme example of this was a student who came to me in 10th grade without much cello background. After a few weeks of lessons, I asked him to do a “what and when” practice chart. He did and it looked good. After a discussion about practicing, I never asked for it again. The student made remarkable progress during the next two years and was accepted by the San Francisco Conservatory for college. In his last lesson with me, I congratulated him on his diligent work and asked how he kept himself so disciplined. He brought out a notebook in which each page was an entire week of practicing using the “what and when” model. It was clear that this system worked well for him and enabled him to make regular daily and weekly progress.

3) I believe that it is important for students to develop the skills of memorization by learning and performing music from memory on a consistent basis. The brain is like a muscle; if it is exercised it grows stronger. The key is for musicians to exercise their brains by memorizing something every day and then to perform from memory in the lesson each week. Starting every lesson with a memorized scale and arpeggio also helps to create an atmosphere of focus and concentration right from the start.

4) I expect to see penciled markings in the music from the student, including metronome markings, bowings, fingerings, English translations of words, and any special notes about bow distribution, dynamics, tone, etc. When I look at the student’s notes written in the music, I can tell a lot about what they are thinking about even before they actually play which saves a lot of time in a lesson.

5) Regarding metronome markings, I ask the students to have a “goal tempo” in a box at the top of the page indicating how fast they imagine that a particular etude or piece should go. I let them determine this goal by themselves, but then discuss with them in the lesson whether it is realistic or if it is true to the composer’s intent. It is also interesting to see whether they understand how a tempo in 6/8 can be indicated as eighth notes or dotted-quarters, but not quarter notes. Understanding pulse and rhythm is an important part of understanding the nature of a piece of music.

Below the “goal tempo,” they write down the actual tempo at which they are able to play the etude or piece accurately. Then, they will write a list of the tempo markings down the left-hand side of the music as they get faster and faster up to the “goal tempo.” I often ask them to snap the tempo of their play through before they start, so that I know that they have a good idea of how fast they are actually able to play it before beginning. That way if they are nervous and about to play too fast, they can correct the tempo before starting to play it in the lesson. This saves time in the lesson and also stresses the importance of internalizing their tempos before playing.

6) Every student must perform in master classes regularly and give a performance at the end of the semester. (I hold weekly classes for the college students and twice a month master classes for my precollege students). These goals help keep the students focused on making progress. It also helps them to observe their own progress by recognizing something that they have accomplished which they could not do previously.

7) In recent years, I have found that I can save a lot of time in the lesson by using modern technology. I will sometimes ask a student to send me a video of an etude from home. But, the caveat is that I would like to see their best possible performance. Usually the student will decide to record the etude multiple times before sending it to me, and as a result, they watch themselves and set higher standards as they recognize their own issues or problems. They send me the video through Dropbox or another internet website, and they also have a record of their own playing for future reference. The minimal amount of time it takes for me to watch this performance outside of the actual lesson is well worth the marked improvement in the student’s level of playing and results in increased self-awareness of their own intonation, rhythm, musicality etc. This is one of the best pedagogical innovations using current technology.

It is important for teachers of intermediate level students to develop logical and sequential pedagogical systems which cover all vital information and repertoire that the students require in order to become successful musicians. Just as a baby will usually crawl before walking and walk before running, developing musicians need to be gradually introduced to concepts and music which they can successfully absorb and play before moving on to more complicated materials. This fundamental principal has been acknowledged by the profession with regard to repertoire. Many teachers use the ASTA Syllabus or the Suzuki books to help determine appropriate repertoire. However the same is true for scales and etudes and indeed every aspect of pedagogy for the intermediate student. It is the responsibility of the teacher of the intermediate level student to develop a good succession of materials that enables the student to gradually move to the next level of competence easily, without physical problems, while gaining stamina and self-confidence. The development of a syllabus of sequential materials is vital in this process.
Figures 1 and 2 from A Sequential Approach for the Intermediate Cellist (and other string players!)

**Figure 1 - A Global Syllabus for a Musician**

<table>
<thead>
<tr>
<th>Technical:</th>
<th>Organizational:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic fundamentals – proper set-up, instrument placement, bow hold, correct use of body</td>
<td>How to practice</td>
</tr>
<tr>
<td>Instrument “geography”</td>
<td>How the brain “works”</td>
</tr>
<tr>
<td>Coordination</td>
<td>Memory</td>
</tr>
<tr>
<td>Balance</td>
<td>Preparing for performance</td>
</tr>
<tr>
<td>Strength</td>
<td>How to put together a recital program</td>
</tr>
<tr>
<td>Facility</td>
<td>Working with an accompanist</td>
</tr>
<tr>
<td>Speed</td>
<td>Stage deportment</td>
</tr>
<tr>
<td>Endurance</td>
<td></td>
</tr>
<tr>
<td>Efficiency</td>
<td></td>
</tr>
<tr>
<td>Flexibility</td>
<td></td>
</tr>
<tr>
<td>Agility</td>
<td></td>
</tr>
<tr>
<td>Concentration</td>
<td></td>
</tr>
<tr>
<td>Relaxation</td>
<td></td>
</tr>
<tr>
<td>Sight reading</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Left Hand</th>
<th>Right Hand</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scales – covering all keys</td>
<td>Tone production</td>
</tr>
<tr>
<td>Arpeggios – covering all keys</td>
<td>Bow distribution</td>
</tr>
<tr>
<td>Speed</td>
<td>Bow strokes</td>
</tr>
<tr>
<td>Intonation</td>
<td>String crossings</td>
</tr>
<tr>
<td>Shifting</td>
<td>Bowings</td>
</tr>
<tr>
<td>Thumb position</td>
<td></td>
</tr>
<tr>
<td>Double stops</td>
<td></td>
</tr>
<tr>
<td>Pizzicato</td>
<td></td>
</tr>
<tr>
<td>Articulation</td>
<td></td>
</tr>
<tr>
<td>Vibrato</td>
<td></td>
</tr>
</tbody>
</table>

**Musical:**
- Character of piece
- Dynamics
- Use of rhythm
- Shaping phrases
- Tone color
- Performance practice issues
- Style
- Making appropriate choices

**General Musicianship:**
- Music Theory
- Music History
- Solfege
- Piano
- Form analysis

**Knowledge of the World!**

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**Figure 2 - Sequential Approach to Scales and Arpeggios**

<table>
<thead>
<tr>
<th>Scales</th>
<th>Arpeggios</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 octave system (Feuilliard #10)</td>
<td>2 octave arpeggios (Feuilliard #11)</td>
</tr>
<tr>
<td>1 octave Thumb Position Scales (Feuilliard #26)</td>
<td>1 octave Thumb Position Arpeggios (Feuilliard #27)</td>
</tr>
<tr>
<td>4 octave system (Feuilliard #20)</td>
<td>4 octave arpeggios (Feuilliard #21)</td>
</tr>
<tr>
<td>2 octave scales up 1 string with 2 and 3 finger systems (1-3,1-2...1-2-3) (1-2-3, 1-2-3...)</td>
<td>2 octave arpeggios up 1 string</td>
</tr>
<tr>
<td>“Around and Around System”</td>
<td>4 octave arpeggios</td>
</tr>
<tr>
<td>Galamian System (3 octaves)</td>
<td>Krastev arpeggios</td>
</tr>
<tr>
<td>Krastev System</td>
<td></td>
</tr>
<tr>
<td>Scales in 6ths</td>
<td></td>
</tr>
<tr>
<td>Scales in 3rds</td>
<td></td>
</tr>
<tr>
<td>Scales in Octaves</td>
<td></td>
</tr>
</tbody>
</table>

**Other scale systems include:**
- One finger scales
- Octotonic scales
- 2 octaves with same fingerings for all major and minor keys (Feuilliard #19 page 23)
- 3 octaves with same fingerings for all major and minor keys (Feuilliard #19 page 24)
- 4 octaves with same fingerings for all major and minor keys (Feuilliard #19 page 24)
- Modal scales (Forbes)
- Scales in harmonics
- Whole tone scales on one string
- Etc.
Part Two: A Sequential Approach to Exercises (for cellists and other string players!)

by Robert Jesselson

In the first part of this series on a Sequential Approach to Studio Teaching, I discussed the importance of establishing an organized and logical pedagogical system in order to ensure that the intermediate level student is exposed to as much technical and musical information as possible. Part one offered an overview of the enormous amount of material that a young musician needs to encounter on the road to become a mature artist. It proposed that the intermediate level studio teacher must find an appropriate sequence of these materials in order to cover everything effectively and efficiently. Just as a math teacher or an English teacher uses a syllabus to create a logical succession of tasks for a young student, the applied studio string teacher should have a clear methodology to insure that all the material is covered and that the student builds a secure technique based on a solid foundation.

The term “intermediate student” here means a young cellist who has played for a few years, perhaps having started in a public school program. The student may be playing through fourth position but is motivated to become a better player, requiring individual attention. He or she is probably not clear thinking about what he or she is doing technically and has not been exposed to the kind of self discipline required for playing on a higher level. Our society does not generally stress discipline, and most young people need help with organizing their technical skills, practice routines, consistency, and their ability to concentrate for lengthy periods of time. The kind of discipline our profession requires is “.... not the rigid submissive discipline attained through force and fear but a far healthier type of inner discipline and self-discipline based on mutual respect and mutual purposes.”

The conceptual strategy for the teacher of an intermediate level student is the following: Introduce the important concepts, help crystallize these concepts through exercises then broaden and reinforce the concepts with etudes, and finally, apply them to the repertoire.

This second article will explore a sequential approach using exercises in order to build technique for the intermediate level student. It will focus specifically on using exercises to teach bow technique, but I would use a similar method for teaching other aspects of cello playing, such as shifting, vibrato and articulation. Part three of this series will focus on a syllabus of etudes which builds on these exercises.

Exercises help focus attention on one specific aspect of technique. It is work on the molecular level of the technical and musical universe. The teacher of the intermediate level student needs to have a large variety of exercises that address both fundamental and sophisticated issues of shifting, vibrato, articulation, trills, etc. We need multiple approaches to addressing these issues because not every solution will work for every student. When I first started teaching, I kept a card file with little exercises that I collected from teachers, master classes, articles in journals, and from conversations with other string players and teachers. I now encourage my own students who are starting to teach to keep their own collection of exercises so that later they will be able to draw on them as necessary.

This article proposes a methodology for teaching the details of cello bow technique through the use of the Feuillard Daily Exercises. For me, the Feuillard book is the cello “bible,” and provides the outlines of a syllabus for many aspects of cello bow technique. I use the five pages of bowing exercises (numbers 32 - 36) to help the students build a good bow arm. We work through these pages slowly and methodically . . . week by week. It usually takes about two years for students to go through all the variations, but by the time they finish they will have created a bow arm that is effective and organized with a real understanding of how to get a good sound in a relaxed manner, and able to change color, texture and dynamics as desired. In other words, they will control the bow, not vice versa.

The first step is to make sure that the student understands the basic principles of the bow arm. These include the placement and function of the fingers on the bow, the “Three Principles of Tone Production” (contact point, weight, speed), and the basic difference between a core sound and a resonant sound. They must know how to play with a straight bow (the bow parallel to the bridge), having figured out how it feels to keep the bow moving at the correct angle, and having an understanding that a straight bow is something of an optical illusion from the perspective of the player’s eyes. They must be able to play with a block of sound, meaning with the same sound from the frog to the tip. The student must know some of the basic rules of the bow arm, such as “the lower the contact point, the more weight,” the higher the string, the lower the contact point, and the lower the string, the more weight for the same sound. They must understand that when using the full bow, the upper arm controls the bow from the frog to the middle and the lower arm controls the bow from the middle to the tip (or the upper part of the arm controls the lower part of the bow; the lower part of the arm controls the upper part of the bow). These factoids must be conceptualized and understood by the body prior to beginning #32 or learned in the first few variations. I also find that an important principle of balance is to use left/right motion (contrary motion) as a prerequisite before starting the Feuillard.

I also use the theme of Feuillard’s #32 to discuss some basic intonation issues, including how to check the tuning of first position (perfect fourth between first finger and the string above; perfect octave between fourth finger and the string below) and Expressive Intonation (raising the F# in measure three and having the B slightly higher throughout as the leading tone). In addition, I insist on the students having the left hand fingers round, fingers down in a relaxed manner, and the thumb under second finger. Since there are so many repetitions of the same notes, this is an ideal way to ingrain these good left-hand habits.

All of the above can be learned in one or two efficient lessons and is often the basis for a radical change in a young person’s sound concept and ease of playing. As the lessons progress, the student’s understanding of all these issues will deepen, and the sound will continue to improve as the student internalizes them.
and as they become a consistent part of the player’s body language and approach to playing.

The Feuillard bowing exercises then provide the opportunity to build on these basics, teaching everything from bow distribution, front and back of the hand and various rhythms, to basic strokes (such as détaché and legato), sophisticated strokes (such as spiccatto and sautillé), as well as collé, and string crossings, etc. The five pages of the Feuillard variations cover all the main issues for the right arm in an organized and sequential manner.

**Overview of Feuillard #32 - 36**
The theme of Feuillard #32 is all in first position. It is perfect for the student to solidify the basic technical issues described above. Each variation should be polished like a gem and perfected with good sound and a mastery of the fundamental bow technique. Terms should be clearly understood, including the difference between spiccatto and staccato, and the importance of a well-executed détaché or legato. The scalar theme of Feuillard #33 adds some complexity by going up to fourth position. This means that the student has to be aware of the contact point going closer to the bridge as the string length is shortened to achieve the same sound as in first position. The variations in #33 provide opportunities to work on playing with more notes in a bow (son file) while keeping the sound full and rich throughout the bow and on all the strings. It also builds on various techniques from #32 (dotted rhythms, sautillé, up-bow staccato), as well as issues of coordination and ease of playing.

The next three pages (Feuillard #34 - 36) all deal with string crossings as the main topic, with #34 using two strings, #35 using three strings, and #36 using four strings. Understanding string crossing is one of the most important subjects for cellists. If players do not use the arm in an ergonomically correct manner, then string crossings in particular can become a major source of tendonitis. Besides understanding how the various joints of the arm move (e.g. ball and socket versus hinge joints), the string player must understand that all of the complicated string crossings boil down to four basic bowing figures: the Arc, Circle, Figure Eight and Wave.3 I also use Feuillard #35 and 36 to explore the use of a twist motion: the pivoting of the body core around the pelvis to assist playing on the upper versus the lower strings.

It is the teacher’s responsibility to understand all the issues involved in each variation so that every aspect of bow technique is discussed and explored. Each variation involves a specific task that can be distilled and clarified. In my college cello pedagogy class, I ask the students to create a syllabus indicating exactly what these tasks are for each variation. Even though many of the students have already studied this with me, in some cases years before, they are often mystified when asked to explain the point of each variation. They may play it well, but cannot describe what it is they are doing. But to become effective teachers and to pass the knowledge on to the next generation, they must be able to verbalize the issues and explain them to another person.

In the next part of this article, I will highlight some of the important pedagogical facets of a few of the variations from #32. Although there is not space here for a complete visit to all the variations and all the successive pages, this will provide a sampling of how to use these variations. Each variation builds on the previous variations and adds one or more new concepts.

**Variation #1**
full bow (tempo ca. 72=eighth note) left/right motion (contrary motion) of body bow parallel to bridge “block of sound” – consistent throughout contact point (c.p.) changes on the different strings to maintain the same sound correct use of arm/elbow relaxed shoulder

**Variation #2**
staccato stroke, produced two different ways: a) keeping bow on string entire length with fast bow speed and b) use small part of bow at frog then move to tip with small upbow ca. 84 to eighth-note! (not fast) for a) use high c.p. for b) use low c.p. bow parallel to bridge

**Variation #3**
legato; core sound ca. 84 to quarter note full bow low c.p.

**Variation #4**
bow distribution, accurately played using lower part of arm for the separate quarter notes in the first measure, and the upper part of the arm for the separate quarter notes in the second measure; use left/right motion, with relaxation of arm and shoulder as one comes into the frog

**Variation #5**
staccato stroke, with equal attacks on up and down bows at about 58 to the quarter note; middle of the bow with lower arm and first finger “kissing” the stick onto the hairs and then releasing. I do not ask for this variation in spiccatto, because I feel that for most of the students at this stage it is more important to develop a full, big sound first, and not too fast. Since Feuillard indicates “M” (middle of the bow), for this to be done spiccatto would require a very fast speed, which is not important at this point.

**Variation #7**
combination of bow distribution and staccato (based on variations #4 and 5); left/right motion; changing c.p. from high (quarter note) to low (staccato notes) for same volume.

**Variation #8**
dotted rhythms using full bow, but stopping the bow before the eighth note; bow distribution so that the eighth note gets enough bow; understanding the rhythm and playing it so that it does not sound like triplets.

**Variation #11**
bow distribution; c.p. lower for the full bow with two notes and slightly higher for the staccato notes, demonstrating the concept of “the more notes in the bow, the lower the contact point”.

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Variation #12

detaché stroke in the middle of the bow with lower arm; first play without the accents, then add accents with either bow speed or first finger; detaché is the most important basic bow stroke, and it is vital that the sound production on this variation is clean and pure.

Variation #13

builds on #12, but with bow distribution, left/right motion, and focus on the c.p. (higher for the detaché since it is a faster bow speed, lower for the quarter notes since there are more notes in the bow).

Variation #14

another c.p. “puzzle” with three different strokes (detaché, staccato and full bow). The c.p. should be higher for the quarter note (fast bow speed going all the way to the tip). Some editions of the Feuillard are missing dots on some of the eighth notes.

Variation #16

yet another c.p. problem: lower c.p. for the two quarter notes to get a full sound; higher c.p. for the faster bow speed notes.

Variations #18 to 21

more complicated dotted rhythm variations, building on 8 and 20 is a good place to discuss “double-dotting” and French Baroque style.

Variations #22 to 24

deals with up-bow staccato; these three variations should all be played at the same tempo, so that the student increases the ability to do the stroke faster. I demonstrate some pieces that use this stroke, such as the Locatelli sonata. I often tell the student that these are “specialty” strokes and not very important right now, emphasizing the irony. I ask them why these variations are really quite important, and see if they understand the main issues: equal bow distribution for all notes, and the ability to attain the same focused sound throughout the bow so they are capable of playing with that sound anywhere on the bow.

Variations #25 to 26

With these variations, I start the discussion about the off the string strokes, such as spiccato and sautillé. I demonstrate the strokes and usually ask the student to work on this variation without having explained anything to them. I like to see what tempo they will choose and how they will naturally produce the sound, before starting to refine the stroke. There are many, many different exercises for teaching sautillé. This will probably be a project for a few weeks, exploring the different approaches and possibilities. As the students work on this variation I ask for them to write the metronome markings down the side of the page, with the idea that it needs to be worked up to about quarter note equals 66. By the time they finish, students should have a good basic understanding of the stroke, which will be further refined several months later in Variations 31 and 32 of Theme #33, and then again Variation 42 of Theme #36.

Variation #27

For this variation, I ask the students to use full bow (rather than just the frog) at about quarter note equals 44 in order to see whether they have absorbed playing with the bow parallel to the bridge at a relatively fast bow speed, with a fast left/right motion. I also use this variation to explore the concept of “ballistic motions” in which the arm is not pulling back the bow from the tip, but rather using the boomerang effect to come back to the frog. This saves energy and is a more efficient use of the arm.

Variations #28 to 30

These variations explore the interaction of the upper arm (active motion) and the wrist (passive motion) at the frog; tempos at about 100 to the quarter note. It is also important that the bow starts always from the string, especially on the upbows in 29 and 30.

(n.b.—Regarding tempos, I let the students figure them out and write them down first during their practice week. I then check each variation to see how they are interpreting the tempos, and whether they are choosing an appropriate speed for each task).

Along with the Feuillard, I use many other bow exercises that I sprinkle into the mix. These include many warm-up exercises that increase flexibility for the wrist and fingers, the Tortelier bow speed exercises, and various sautillé exercises. Following the Feuillard I usually continue the exploration of bow technique with the 40 Sevcik variations, Op. 3.

The third article in this series will focus on a sequence of etudes that will build the core technique and cover a variety of musical styles in a logical and progressive manner in order to prepare the student for more advanced literature.

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