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CHAPTER III

Bowed string instruments: the violin, viola, violoncello, contrabass. The viola d'amore.

§ 32. Bowed strings are the soul of instrumental music. Penetrating and rich timbre; sonority capable of bending to every nuance of intensity; simple, admirable mechanism giving it a degree of agility inaccessible to any other genre of instruments, and at the same time, the power to sustain notes of unlimited duration: these are the qualities that elevate bowed strings to a position of undisputed primacy, as much in the symphony orchestra as in the vocal-instrumental ensemble. Additionally, the young musician who wants to learn the technique of instrumentation is required to study carefully their properties and resources as ensemble instruments.

A treatise on orchestration being unable to cover a method for every instrument, we will be content to provide here the essentials to composers who have no practical experience with a bowed instrument.

Violin

(in Italian *violino*, plural *violini*; in German *Violine*, *Geige*
[and in French *violon*, plural *violons*])

§ 33. This is the highest-pitched of the bowed instruments, the soprano of the old viol family carried to the utmost degree of perfection.

The four strings of the violin are tuned in fifths to one another. Played open, i.e. without being touched by the left hand, they sound the notes shown here:



We see that the strings are numbered from highest to lowest. This has been so since the remotest antiquity for all string instruments, whether equipped with a neck or not.

(1) Sometimes the violin's tuning is modified for a soloist, but it never varies in the orchestra.

§ 34. Except for the thumb, the fingers of the left hand produce the numerous notes constituting the violin's range, by pressing upon the strings. When indicating the fingering of bowed instruments, the index is counted as the 1st finger, the middle finger is the 2nd, the ring finger the 3rd, and the pinky the 4th. An open string is marked by 0. The normal spacing between one finger and the next corresponds on the violin to one degree of the diatonic scale, whole tone or semi-tone.


I. In first position, the index finger settles on the degree immediately higher than that of the open string, and scales have the following fingering:

1st string 0 1 2 3 4

2nd string 0 1 2 3 4

3rd string 0 1 2 3 4

4th string 0 1 2 3 4




It will be noticed from the first of these scales that the notes D_3 , A_3 , and E_4 are produced by either an open or stopped (fingered) string. The latter is preferred in most cases, the tone of the stopped string being of better quality and livelier than that of the open string. Sometimes two strings in unison are used for obtaining great power. Thus, in the sublime monologue of the four closing lines of Act III of *Armide* by Gluck, "the horrible menace" of Hatred, which the second violins repeat with relentless persistence, attains its maximum intensity only if the rhythmic figure is played as follows:

Ex. 1.

Andante. (in long strokes)

4th string double stop 4th string



II. To produce notes higher than B_4 , the violinist must move the left hand closer to the bridge. By advancing it degree by degree, the performer goes from 1st position to 2nd, from 2nd to 3rd, and so on, up to 7th position, of which the highest note, A_5 , constitutes today the normal limit of the violin in the orchestra.

(see next page)

	4th string	3rd string	2nd string	1st string
2nd position				
3rd position				
4th position				
5th position				
6th position				
7th position				

The old classical masters Händel and Bach do not go beyond 5th position (F₅). Haydn and Mozart, in writing for orchestra, confined themselves to these limits. It is only since Beethoven that the violin has asserted its current range in the orchestral ensemble.

Ex. 2.

Allo con brio.

Beethoven, EGMONT, final apotheosis and recapitulation of Overture

On exceptional occasions, the first violins sometimes ascend to C₆ (9th position);

Ex. 3.

Allo con brio.

Beethoven, Ibid.

and in our time we do not even fear giving them E_6 (11th position).

Ex. 4.

All^o assai stretto. *8^{va}-----*



R. Wagner, TANNHÄUSER, end of Overture

But it should be noted that positions higher than 7th (A_5) are used only on the chanterelle and 2nd string, and are hardly practical in the orchestra other than easy passages of repeated notes, such as those above.

There is always a certain difficulty in passing from one position to another in quick passages. The difficulty is greater in descending than ascending: it is reduced to a minimum if the descent is done in a melodic progression with intervals no greater than a fourth. Several successive jumps generally should be avoided, unless landing on an open string—which is the easiest way to change positions.

Ex. 5.

Prestissimo. 132 = ♩



Beethoven, 9th Symphony, finale

III. We have just seen that the violin's fingering is based on the diatonic scale. To play a chromatic scale on this instrument, one is forced to use the same finger for two successive degrees of the scale (where the diatonic scale does not proceed to a semi-tone). The degrees played on the same finger are those located at the same position on the staff—in other words, those forming a chromatic semi-tone.



Rapid passages mingled with chromatic intervals are never easy for the orchestra to perform. For best results in an orchestral ensemble, fast chromatic scales must not be too high and must be played *détaché*.

Ex. 6.

All^o vivace. 152 = 




Rossini, Overture to WILLIAM TELL

Fast, slurred chromatic scales are better given to wind instruments than to violins, unless, however, the composer has intentionally used the resulting sound for picturesque effect.

Ex. 7.

Allegro. 80 = 



Beethoven, Storm in Pastoral Symphony

The violin, not being a tempered instrument (§ 29), distinguishes audibly between the flat and sharp notes that occupy the same keys on keyboard instruments. (1) In moderately fast chromatic passages where each note has its well-defined harmonic value, it is necessary to write the notes correctly in relation to their tonality, without avoiding double-sharps and double-flats. (2) But when the degrees of the chrom-

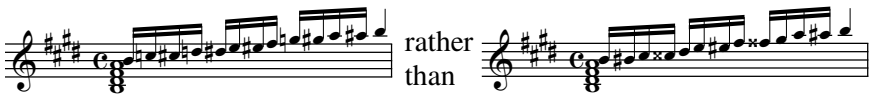
(1) [André] Grétry in his *Essaies* [*Essays*] (vol. III, bk. 6, ch. 1) recounts an anecdote that proves that in this respect the practice of performers is ancient and universal: “In the opera *l’Épreuve villageoise* [*Trial in a Village*], in the duet ‘Bonjour, monsieur,’ I gave this line to the second violin:

“I noticed the musicians at the first rehearsal: my having not warned them, not one of them played the open G string; all of them stopped the string to raise it a quarter-tone.”



(2) We note in this regard some rather bizarre oversights in Beethoven. In the first movement of his Violin Concerto (measure 10 and elsewhere), D# inappropriately replaces E^b; in the Andante of his Piano Concerto in E^b (measure 7), G# appears in place of F*, the major third of the dominant seventh that is built on D#.


atic scale are just passing tones, the simplest spelling is chosen, as long as it is compatible with the key. Thus one writes

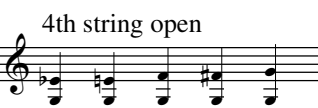




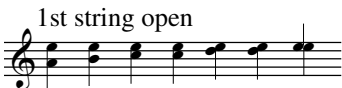
§ 35. The violin, as well as viola and violoncello, can sound two, three, even four strings at the same time, so as to produce chords or chord fragments. This is a technique often used in the orchestra since Haydn, who appears to have introduced it (around 1760). Händel and J.S. Bach abstained from it almost completely, though the latter did show, in his admirable sonatas for solo violin (1), the polyphonic wealth concealed within bowed instruments.

To play them easily and produce a satisfactory effect, the chords in double, triple, and quadruple stops must not contain chromatic dissonances whose harmonic connections are difficult to sense readily, such as diminished and augmented thirds and sixths. The more notes from open strings, the better the chords will sound. Finally, it is a mistake to believe that the intensity of the string section (as a whole) can be heightened by lavishing it with double strings and multiple stops. The bow and fingers having to reach several points at the same time, their attention is divided and hence their action is less energetic.

I. We now list, in order of increasing difficulty, the *double stops* used outside solo work.

a) double stops on two open strings 

b) double stops on one open string 
 4th string open



3rd string open 
 2nd string open 
 1st string open 

(1) *Bach-Gesellschaft* edition (Leipzig, Breitkopf), vol. 27, pt. 1.

c) double stops with no open string. In the orchestra, they should not be used in rapid succession, otherwise they become unplayable in many cases.

1. easy:

Minor and major sixths, from  to 



Diminished, minor and major sevenths, from  to 

Minor and major thirds, from  to 
seldom used 

2. less easy:

Perfect and augmented fourths, from  to 

seldom used 

Diminished, perfect and augmented fifths, from  to 

seldom used 

3. quite difficult: octaves and seconds. Among intervals of this type with no open strings, only the following are used in the orchestra:

octaves 

minor & major seconds 
1 1 1 1 1 1 1 1 1 1 1 1
4 4 4 4 4 4 4 4 4 4 4 4

Wide skips of double stops, necessitating the complete movement of the hand, must be avoided as extremely difficult, if not impossible. For example:



Such skips are feasible only in situations discussed later (§ 37, III, c).

Double stops are used almost exclusively in accompaniment parts, whether sustained, repeated notes, or tremoli. They are rarely used in melody; this happens only if the composer is aiming for a very full sound.

Ex. 8.

Maestoso.



II. *Triple stops* form complete chords or chord fragments;

a) on two open strings:

b) on only one open string:



c) with no open string: almost never, other than for perfect major or minor chords; and rarely, chords with augmented fifths. To be played easily in groups, the chords should be arranged to have either a fifth at the top and a sixth at the bottom, or vice versa, or a sixth on both ends; if these conditions are met, then triple stops pose no difficulty on the violin, viola, or even violoncello.

on the three lower strings




on the three upper strings




Chords of sevenths in triple stops also are played without difficulty on the violin's three upper strings.



bow. Using the bow's *point*, *heel*, or *middle* produces appreciable differences in the nature of the tone. The point produces tones that are fine and crisp; the heel gives it an energy bordering on harshness; the middle favors a tone that is supple and melodious.

I. The absence of a *slur*  above or below notes signifies that successive notes are played alternately on the *downbow* and *upbow* (for exceptions, see IV, **b**), and consequently each one is articulated distinctly.* An instrumental melody conceived thusly is the exact equivalent of a vocal cantilena, in which each note corresponds to a syllable of the poetic text. A staccato mark above or below the note signifies that the note must be separated from the following one by a small silence.

Ex. 11.

All^o moderato. 76 = 

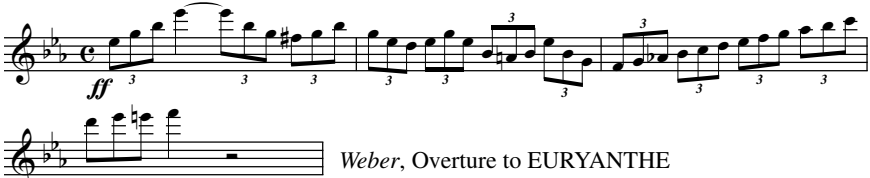


p *Dolce*

Beethoven, Eroica Symphony, finale

Ex. 12.

All^o marcato con molto fuoco.



ff

Weber, Overture to EURYANTHE

Ex. 13.

All^o ma non troppo. 80 = 



ff

Beethoven, 4th Symphony, finale

In a singing, sustained phrase, a composer wanting each note articulated will do well to avoid the dryness of negligent orchestra musicians bowing the string, by adding some supplemental notation such as *cantabile*, *sostenuto*, or *arco*. Today, the same meaning is notated with a tenuto marking (—) above or below the note.

Ex. 14.

Molto adagio.



Sotto voce

etc.

Beethoven, Quartet, Op. 132

(*) This is the style of bowing today called *détaché*. —Ed.