

**A Historical Survey  
of the Theory and Practice  
of Violin Scordatura**

**A dissertation submitted in partial fulfilment  
of the requirements for the  
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in the Department of Music  
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## Introduction

Scordatura is an unfamiliar concept to many musicians. Even violinists do not know it very well, although it has been mainly the violin which has used scordatura. Moreover, the intention today is increasingly to perform early music in an authentic way, and scordatura is an important feature of early style. My own interest stems from my experience as a Concert Master and chamber musician, and from my exposure over many years to works in which some knowledge of scordatura is required.

The Italian word "scordatura" (descordato, discordata) comes from the verb *scordare* "to mistune" (French *discorde*, *avale*, or German *Umstimmung*, *Verstimmung*) (*The New Grove Dictionary of Music and Musicians* (New Grove) 17: 58), and was used in lute and viol practice in the sixteenth century. At that time it was common practice in lute playing to lower the bass string to produce drones for "quasi-oriental dances" (Op. cit.). From about 1590 to 1685 the lira viol used many different tunings, up to fifty, without recognising any one as a standard tuning. Ganassi Da Fontego (1492- ?) gave tunings for four- and three-stringed viols, some of them in fifths like today's violins (*New Grove* 7: 143).

In the middle of the seventeenth and during the eighteenth century we find scordatura used by most stringed instruments, especially the violin and the viola d'amore. Unlike early scordatura, when the

number of strings was not established and their various tunings were adopted in an almost haphazard way from different origins, later scordatura seems to have been used in a more restricted way, mainly for artistic and technical reasons.

Nowadays, “any tuning of the violin other than its established tuning (g, d', a', e'”) is defined as a scordatura”. (*New Grove* 17: 56). This definition applies to our contemporary understanding of the term, in reference also to the pitch of a'=440. As we will see in Chapter 1, pitch up to the late eighteenth century was not fixed, and that there existed different pitches to suit different instruments or occasions. Musicians used to tune their instruments lower or higher according to the pitch they used in a particular venue, or they left the tuning as it was and transposed the music. They did this kind of “transposing” scordatura without indicating it, since it was a common practice. It was thus not in its time regarded as “mistuning”, although it was one of the preconditions for other kinds of scordatura. This kind of seventeenth-century scordatura (when the whole tuning of the violin was mistuned literally up or down) was also employed during the nineteenth century but for different reasons, as we will see later (in the chapter on Paganini and scordatura).

Some authors, however, still believe that scordatura exists only when the violin is retuned so that the intervals between the strings are no longer perfect fifths, so they do not recognise transposing scordatura as scordatura (Lesser 1932 and Yampolski 1968). For the purposes of this dissertation I have used the broader concept of violin scordatura as any tuning other than g, d', a', e'”, which takes into account the

varied practices of musicians in different centuries, and indeed different cultures. For this reason, although this dissertation is primarily concerned with western art music, Chapter 6 deals also with other violin traditions such as those found in jazz, folk music and Indian music.

Finally, a definition of scordatura which includes transposition or retuning in the broadest sense is also necessary when one considers that the violin, or indeed any string instrument, is constructed in a delicate relationship between materials and vibrating air. Any change to the pitch of one or more strings after the instrument is made affects the tone and volume of the sound, as does any change to the materials or the size of the instrument. For this reason, I disagree with Lesser and Yampolski's view of scordatura, just as I would challenge anyone not to call a clarinet in B-flat a transposing instrument.

Chapter 1 is an historical overview, giving the context necessary for a discussion of the rise and development of scordatura in Chapter 2. In Chapter 3 the main technical and notational aspects of scordatura are discussed. Chapters 4 and 5 deal with specific examples from the seventeenth to nineteenth centuries, and Chapter 6 brings the enquiry up to the present day. The dissertation ends with a short Conclusion, followed by a Bibliography and a List of the main scordatura works cited, for easy reference.

During the course of this research I have discovered areas that would have been interesting to pursue but would have taken me beyond the

scope of a short dissertation. For example, I have sometimes come across passages in early violin music of surprising and extreme technical difficulty. Such passages would not be so difficult if they were played with one or more retuned strings, yet they are not indicated as scordatura. Possibly composers of those times would not have found it necessary to indicate the retuning or transposition since scordatura was common practice.

This kind of detailed examination would also require the study of original manuscripts, which I have not been able to do. Nor have I set out to explore the many theories of aesthetics which underly the use of scordatura in different periods and styles, since this would be a major task. The dissertation remains therefore primarily an overview of the history, theory and practice of scordatura, giving a variety of examples from different periods, in the hope of stimulating more interest in the reader.

## Chapter 1

### Overview of the history and development of the violin, violin tuning and pitch

It is difficult to establish even approximately when and from where the violin originated, since different authors make contradictory claims. However, it is important to look at the ancestors of the violin in order to clarify what scordatura is and how it developed, since its various predecessors influenced the way the violin was played and tuned in the early days of its existence.

One of the theories relating to the origin of the violin is that the first bowed instrument was the Indian ravanastron, a two-string instrument tuned in fifths (Gill 1984: 18). The descendants of this instrument appeared in Europe during the Crusades. Another theory suggests that a plucked or bowed instrument was known in northern Europe long before the Crusades. This had the name crot, cruit or crouth, with two to six strings (Ibid.). A third theory says that in the sixth century the Byzantine chronologist Theofilact Simokrat saw in the court of Emperor Mawricius Slavonic musicians with instruments like those which today still exist in the folk tradition of Southern Europe: gusla, gadulka, lira or liriza (see Chapter 6). The German musicologist Curt Sachs states that the south Slavonic tribes from the Balkans were very likely the first who understood the acoustical problems of bowed string instruments.

After this early period the development of string instruments is more clear. The rebec (rebab, ribeca) and the fiddles (fidel, vielle) are the most recent ancestors of the violin. The rebec exhibited several features which were afterwards adapted to the violin. It had no frets, some fourteenth-century instruments were even four-stringed, and had already a primitive sort of scroll. Usually the tunings were c', f', c", or d', g', d". This tuning must however be taken as relative, as the practice was to pull up the first string (e") as high as it would bear without breaking and then tune the two others from it in accordance with the given intervals (Van der Straeten 1968: 1/8). I will refer to a similar situation later in this Chapter when discussing the problems arising from different concert pitches in Bach's time.

A combination of features of the rebec, fidel and lyra da braccio leads us directly to the violin. This process "seems to have been a slow and arduous one. Constant experimentation with numbers of models of instruments in the late fifteenth and early sixteenth centuries led to the elimination of many forms, of parallel development, and of multifarious stringings and tunings" (Marcuse 1975: 512).

The treble gigue (giga) was a kind of rebec in the fifteenth century with three strings tuned g, d', a'. It survived in miniature form to the end of the eighteenth century as the "kit" or dancing master's fiddle (French = *pochette* ).

Michael Praetorius (*Syntagma Musicum* 1620) lists the various members of the violin family: "*gar klein Geig*" or *pochette* (the kit) g', d", a" or a tone higher; *klein descant Geig* (or the violino piccolo) c', g',

d", a", or a tone lower; "Discant Viol" (or violino) g, d', a', e"; and tenor viol (modern viola) c, g, d', a'. In his *Grundrichtiger... Unterricht der Musikalischen Kunst* (1697) Daniel Speer describes a "terz" violin tuned to b-flat, f', c", g" (quoted in Meierott 1993: 1181). The "terz" violin and the "klein descant Geig" are more usually marked "violino piccolo". There is music written for them from the end of the seventeenth to the middle of the eighteenth century mainly by German composers, such as Philipp Heinrich Erlebach (*Liedersammlung*, 1697), J. S. Bach (Brandenburg Concerto No. 1 in F Major) and Von Dittersdorf.

It is important to stress that it was common practice in those days for musicians to play several different instruments with ease. Moving between the above instruments with their different tunings was effectively playing in scordatura.

From the information available, it seems that the difference between tunings was not that great. In this connection it may be noted that the violin maker George Hart (1884) speaks of an Andrea Amati violin that originally had only three strings (quoted in Marcuse 1975: 514). The eighteenth-century quinton had a violin body and was tuned d, d', a', d", g" to facilitate playing in the higher positions. Musicians could either change the instrument for different pieces in order to facilitate playing in the higher register and different keys, or they could retune the same violin higher to avoid the difficult positions (as in the case of the quinton). John Evelyn writes in his diary in 1679 of "the viol d'amore of five wire strings played on with a bow, being but an ordinary violin played on lire-way by a German" (Marcuse 1975: 510).

Mattheson in 1713 tells us that this instrument was usually tuned to C major or C minor. Martin Heinrich Fuhrman (1706) comments that it was used in scordatura, and Johann Eisel in 1738 gives its tuning as g, c', d'-sharp (or e'), g', e'', with an alternate violin tuning from c to e'' in fifths.

In Chapter 4 we will consider more about the viola d'amore, its relation with the violin and its scordatura, when discussing Ariosti's *Six Lessons for Viola d'Amore and Continuo*. There were a lot of similar instruments at this time, including the *violino d'amore* (violon d'amore) a small instrument with five bowed strings tuned g, d', a', d'', g'', and six sympathetic ones, or four bowed strings tuned e', a', d'', a'', and twelve sympathetic ones (*New Grove* 19: 816).

From this conglomeration of instruments preceding or contemporary with the violin, with their different number of strings and tunings, we can see that violin scordatura in its early stages was a reflection of a complex situation, and was very much a part of the early theory and practice of string instruments.

Now we will look at some aspects of the construction of the early violin and its development through the centuries. The mechanical construction of the violin is relevant to this research because it caused limits on the playing technique which led to the development of devices like scordatura. One may also argue that new styles and ideas in the arts and music forced the mechanical development of the violin, scordatura being one of the ways to help this development, as we will see later in Chapter 5.

In the sixteenth and seventeenth centuries during the rise and establishment of scordatura, the way the violin was constructed was one of the reasons why performers and composers used scordatura. At that time the neck of the violin was about one cm wider and about 1.5 cm shorter than the modern violin, the fingerboard 3-5 cm shorter, and the body and upper bouts larger (Sachs 1942: 353). Also the bow was shorter and lighter. This made both fingering and bowing more difficult, especially shifting into the higher positions and using the fourth finger. It was almost like a rule in the seventeenth century not to use the fourth finger (see Chapter 3), although there were of course musicians who made exceptions to this rule.

Violinists used plain gut strings and the difference between stopped and open strings was not large. (Wound strings - silver over gut - are first heard of in connection with the viola da gamba only at the end of the seventeenth century.) Gut strings, because of their pliability, were more easy to tune than today's steel strings, and this of course made retuning during a piece easier and hence may have encouraged scordatura. Another feature of the evolution of old string instruments which relates to scordatura was the gradual change from the peg disk to the peg box. The reason was to permit greater tension of the strings (higher tuning or pitch) and more security and ease of tuning. The early seventeenth century was clearly a period of intense experimentation for string instruments.

In *Epitome Musical* by Philibert Jambe-de-Fer (Lyons 1556) we have the first printed description of the violin. It is stated there that

French viols have only five strings, while Italians have six and they are tuned in fourths, and that the violin has four strings, tuned in fifths. Furthermore:

One calls viols those instruments which the gentlemen merchants and other people of quality use for their pastime. The violin is that which one commonly uses for dances, and with good reason, for it is much easier to tune, the fifths being sweeter for the ear than the fourths. It is also easier to carry, a thing which is very necessary in conducting a wedding or mummary (quoted in Van der Straeten 1968: 1/81).

It seems that at this time there was lateral influence between the old viols and the new violins. The violin was not immediately accepted and there was a long period of intense experimentation for instruments, which included things like construction, tuning, sound and technical possibilities. The earliest scordatura was probably intended partly to overcome the prejudice against the violin, since it was used mainly in the lower register, giving the instrument a nasal quality more like the viol and thus helping the violin to compete for the role of leading instrument.

The earliest piece of music in which the stated instrumentation is the "violin" belongs in the set of *Concerti di Andrea e Giovanni Gabrieli per voci e strumenti musicali* (Venice 1587, publ. 1597). Before that, published music was "apt" for different instruments, and many pieces bore the subtitle "to be played or sung" (Sachs 1942: 297). But the violin part of the work mentioned above was written in the alto clef and descended below g, so that it could either have been written for

violin in scordatura or for some violin-like instrument, so its instrumentation remains somewhat ambiguous.

Arthur Pougin suggests that in the grand *Ballet Comique de la Reyne*, written by Lambert de Beaulien and the violinist Salmon in 1581, viols and violins were employed alongside other instruments (Van der Straeten 1968: 45). The violins were reserved for the dances, and there was a big effect made by the contrast between their brilliance and the softer, more veiled tone of the viols. Baltazarini, Italian ballet master and a very good violinist, played in this performance, with a band of ten violinists using five-stringed violins tuned in fourths. In that time in Italy there were in use five-stringed violins tuned a, d', g', c'', f''. They evidently came with Baltazarini and his players to this performance, and belonged to those transitional forms of instrument which still retained some of the viol features.

It may be useful to discuss at this point tuning in fourths--very usual for the whole old viola family and used here also in the first violins. With such tuning the musician is able to play easily a scale in first position with only the first two fingers. If he doesn't use open strings he still only has to use the first three fingers. Furthermore the fifth string in the above-mentioned violins (f'') allowed him to play even relatively high notes (e.g. b'') without using the fourth finger. One must also remember the wider and shorter neck of the violin at this time and the lower bridge. The result of all this was that most violinists could avoid using the fourth finger and employed shifts very rarely. It is interesting to note that down to the present day folk fiddle-players (Scottish or Shetland reel players) and other non-

professional contemporary folk instrumentalists (e.g. on gusla, gadulka and lira), as well as many Indian violinists and African maskanda violinists or guitarists, don't use their fourth finger.

Today's teachers and students make a considerable effort through exercises to strengthen the third and fourth fingers and develop their independence. But four centuries ago this was not the case. For the ordinary performer in that period, who did not have a large technical ability but was a leading figure in music, scordatura was simply a way to avoid the technical problems of shifting positions or using the fourth finger. Later on, the uses of scordatura became more complex and sophisticated, and it began to feature in the technical and aesthetic development of violin music. In fact, one could say that scordatura became a feature, rather than a convenience, helping to facilitate playing in the richly polyphonic textures of the late Baroque, to generate sharper timbres in the Classical era, and to promote virtuosity in the early Romantic period. In short, it widened the range of the instrument's scope, rather than merely making already limited possibilities easy to play.

Another important factor relating to the widespread existence of scordatura and the history of instruments associated with it, is the variability in "concert pitches" which existed before the beginning of the nineteenth century. Indeed, there is evidence of a close relationship between the pitch variations of the sixteenth and seventeenth centuries and the transposition scordatura practice of that time. The problem today in researching the pitches of that time is considerable, because very often the evidence cannot be measured,

only conjectured from circumstances. Most scholars consequently have different interpretations, which are sometimes contradictory.

The particular quality of a sound (an individual musical note) that fixes its position in the scale is called pitch. The varying of pitch depends on a varying of the vibrations or frequencies in the sounding body. Until approximately 1800 different vibrations or frequencies were associated with the same written note in different periods, countries, cities, churches and instruments, more especially keyboard instruments. The pitch may have varied from church to church within the same town, and even within the same church at different times of the year (for example the pitch of organs in unheated churches in summer and winter). The concept of a precise and universal relationship between pitch and written music was alien to musicians before the late eighteenth century, and there was no specific term for pitch itself. There was no "standard" pitch, but many "pitch-standards".

At the beginning of the seventeenth century Praetorius undertook in the second volume of his *Syntagma Musicum (De organographia 2/1612)* a survey of performance practice in concert music, giving valuable information about the pitch-standards of his time and before. This question has been discussed more recently by A. J. Ellis, Arthur Mendel (1968) and Thomas and Rhodes (1972)(*New Grove* 14: 781).

Praetorius wrote about three main pitches spread over the interval of about a minor third: "Chor-Ton" or "Cornett-Ton" (choir or organ pitch, commonest in Germany) being the highest one, a major second higher

than "Kammer-Ton" (chamber pitch, introduced in France first because of the development of wind instruments), which in turn is a minor second higher than the lowest--"Tief Kammer-Ton" (low chamber pitch). From this historical information together with the pitch of extant instruments, we can give a descending measurement of the pitches in the period 1500-1850 in Herz. One of the highest pitches is the organ in Halberstadt ( $a' = c510$ ). The organ pitch in Leipzig, Weimar and Hamburg in Bach's time was  $a' = c480$ . Praetorius complained about  $a' = c455$ --it was too easy to break the violin strings.  $a' = c422.5$  was the tuning fork associated with Handel in London (1740).  $a' = c410$  was J. S. Bach and Adlung's "Tief (low) Kammer-Ton",  $a' = c380$ --"Chor-Ton" in Prague. There were also the early French pitch, the pitches in Poma and Paris and the very low French "Chamber-pitch" and finally  $a' = c360$  in Worcester Cathedral (1611) and the Chor-Ton in England at that time. This gives some idea in what circumstances composers and performers were working (Op. cit. 780).

Before the sixteenth century the situation was even more complex, for example as mentioned earlier, there was a custom of tuning a string instrument by pulling up the first string as high as it could bear and then tuning the other strings according to the required intervals. Even earlier (thirteenth to fifteenth centuries) when vocal music was more prominent than instrumental music, pitch would often be chosen to suit the singers involved, as is the case even today in the choice of pitch or key for classical Indian music, jazz, or Western art song. Suffice it to say that all these pitch systems were "standard" in their time and none of them were transpositions of an absolute standard.

In Bach's time singers never had "pitch problems" because they simply took their pitch from other instruments. The problems associated with transposition and tuning arose with the involvement of keyboards, frets, fingerboards, strings and finger holes. This was one of the reasons for transposing scordatura in string instruments. Violinists for example had two choices: to retune the strings according to the circumstances or to transpose the music at sight without re-tuning. In the first case they played scordatura, using the violin like a transposing instrument, and in the second they simply transposed at sight, using appropriate fingerings. From our point of view, with a fixed pitch of  $a'=440$ , all this seems problematic, but at that time musicians used this practice without any problem and without being aware that they played in transposition or scordatura.

I shall end this Chapter with some examples of this practice in Bach's time. Luckily some original scores and performing materials of the late Baroque have survived. One of them is Kuhnau's Christmas cantata, *Nich nur allein am frohen Morgen*:

in which the organ part is notated in A-major and the strings likewise - i.e. the strings tuned to the organ pitch, Chor-Ton, as in Weimar and Mühlhausen. The violin parts, however, were intended for the oboes to play from, too, and they bear the double signature:



meaning that the violins should read the notes in the soprano clef, with the three-sharp signature, and the oboes should read the same notes in the G clef, without signature, which would make the oboe notation a minor third higher than the string notation, just as in the [Bach] Weimar Cantata 161 (Mendel, 1968:198).

In a letter from Kuhnau to Mattheson in 1717 he refers to the practice of J. S. Bach to write for strings not in "Chor-Ton" but in the pitch of the woodwinds, in "Kammer-Ton", a major second lower (Mendel, 1968: 200). The same is the case in the *St. Matthew Passion* and in the *Christmas Oratorio*. But there were many exceptions. Arthur Mendel writes in his study "On the pitches in use in Bach's time - I": "the oboes used in Cantata 23 played at a pitch a half tone lower than usual, and the strings tuned down to them" " (Musical Quarterly 1968: 201).

The same situation but for a different reason is found in Cantata 194. Because the pitch of the organ in Störmthal was very low and this cantata was written to celebrate its inauguration, Bach wrote the music according to this pitch. When he later in Leipzig performed this cantata with an organ of higher pitch, Bach used the performing parts prepared for Störmthal and noted that the woodwind players must use their low-pitched instruments (or crooks) and the strings must tune low so as to compensate for the high notation given for the low pitch of the Störmthal organ. "With the thinner strings, lower tension and less incisive bows of Bach's time such tuning of the strings up or

down by as much as a whole tone, unthinkable to the modern string-player, was common" (Mendel 1968: 201).

Adlung in his *Anleitung* (Second edition, 1783: 385), advising how to make adjustments between "Chor-Ton" and "Kammer-Ton" writes: "The organist can play a second lower, or the director of the music writes the organ part a tone lower, and tunes the stringed instruments down a tone so as not to have to rewrite everything" (quoted in Mendel 1968: 201). Sometimes when Bach repeated a Weimar work in Leipzig and he wanted to use the same string parts, which he did with Cantatas 172, 21, 31, 161, and 70, the performance in Leipzig was about one tone lower than in Weimar (because of the differences in pitch between these two cities). Sometimes this was possible but sometimes the vocal parts were uncomfortably low. So he had to transpose the strings up one tone. This involved a great deal of work, and Bach was not always able to transpose all parts, so it seems most likely that string players would have retuned their instruments up or down between half a tone and a minor third according to the pitch of the organ, the presence of different wind instruments and the reasonability of the vocal compass.

Sometimes, then, when there was no time for the composer to rewrite the performing parts, it seems that the string players transposed the music from the sheet, or read the notes in different clefs (like the example above). In addition, there were parallel developments in the temperament of the keyboard instruments with which violinists were accompanied. Tunings included Pythagorean, just intonation, meantone and eventually equal temperament. The differences between

equal and other temperaments were clearly audible, and, for example, it was, and still is, perfectly possible to play the note d' sharp on the violin differently from e'-flat irrespective of how the violin is tuned. However, this perhaps posed more of a problem to composers and theorists than to performers: "in practice, the performer's musicianship and technique are usually overriding factors" (*New Grove* 9 279).

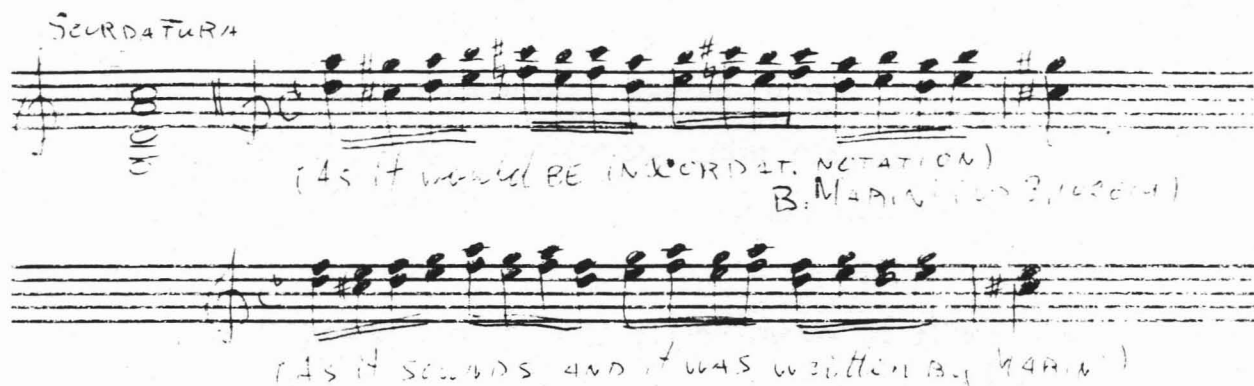
From this account of the pitch problems in the sixteenth to eighteenth centuries and the performing practice of composers and players, we can see that the tuning of the violin was not fixed, and players had a choice between transposition--when the player adjusted different fingers in different pitches without retuning the instrument--and scordatura--when he retuned the whole violin and played with the same fingers in different pitches. Both were widespread practices, as was the custom of reading in different clefs--also a kind of transposition.

## Chapter 2

### The rise of scordatura

It is difficult to say when exactly scordatura first appeared just as it is difficult to say when the present-day tuning of the violin was established. Few sources refer to this, and problem is exacerbated by the fact that during the transition period of the seventeenth century the new violins were still called viols by some authors. Moreover, in France there was sometimes a mixing of the terms (or translation mistakes) viola for violon. G. Beckmann in *Das Violinspiel* speaks of an instrument (probably a violin) mentioned in the appendix to Aristotel's *Morals* (1576, ms. in Paris Conservatoire library) tuned g, d', g', d'' and a tablature is given for it (see Chapter 3).

The earliest piece of music apparently written for the violin in scordatura is the *Sonata Seconda per il Violino d' Inventione* by Biagio Marini, Op. 8, of 1626 (Boyden 1967: 130; Nelson 1972: 22). According to other sources (Russell 1938) this is Op. 7 dated 1629. Marini, an Italian violinist who lived in Venice, was unique among his countryman in his use of scordatura. In this sonata he directs the player to retune his e''-string a third lower during seven bars rest, and then play in scordatura fast passages of double-stopped thirds in semiquavers:



If the thirds are played like fifths (one finger stopped across two strings) the passage becomes easier and the sound clearer. Only when the violinist plays the major thirds (F-A) is it a problem necessitating greater accuracy. Later in the piece the composer requires the player to retune to normal tuning within six bars' rest.

What is very interesting is that this piece is notated as it sounds, and the player must work out the fingerings. Such notation is rare at this or indeed any time (as is retuning during the piece of music) and most later scordatura music is written in "hand-gripp" notation (see Chapter 3). It is important to remember that during the establishing and flourishing of scordatura the best violinists of the day were also the main composers for that instrument, and it was usually the case that soloists played mainly their own compositions. Thus, the way music was notated was not such an issue for them: notation was an *aide-memoire* rather than a precise medium of expression. In addition, many musicians were also virtuosi on other instruments. This allowed them most of the time to write music for instruments with which they were exceptionally familiar.

For fifty years after Marini scordatura was nearly forgotten in Italy, but began to flourish in Germany. Indeed, it was one of the outstanding characteristics of German violin playing in the seventeenth century. Violinists and composers like Biber, N. Strungk and J. Fisher contributed to the early epoch of violin scordatura, and some of the technical and musical achievements of Biber were never met again. Compared to Corelli's music, however, that of Biber was less worthy of the effort required to perform it and of the development of musical form, melodic language and harmony. But technical advances begin somewhere and somehow, even if the implied horizons are not reached for years. Probably the Germans, because of their interest in contrapuntal music, developed and employed more double- and triple-stopping, and scordatura was a great asset in the performance of these. In this time the German violin school generally is much more advanced in technical aspects than that of other countries. It is interesting to cite one story, related in *A General History of the Science and Practice of Music*, Volume II, by Sir John Hawkins. Nicolas Adam Strungk, violinist to Ernestus Augustus, Elector of Hanover, while visiting Rome, made occasion to call upon the famous Italian violinist, Corelli:

Then Strungk picked up the violin, put it out of tune, and played on it with such dexterity, attempting the dissonances occasioned by the mistuning of the instrument with such amazing skill and dexterity, that Corelli cried out in broken German, "I am called Arcangelo, a name that in the language of my country signifies an Archangel; but let me tell you that you, Sir, are an Arch-devil" (quoted in Russell 1938: 87).

Technically, the French violinists were far behind their Italian and especially German contemporaries, because the nature of French music was not suited to further the violin's technical development. With few exceptions French violin music of the seventeenth century was largely synonymous with dance music. During the eighteenth century the situation changed and France and especially Italy became the centres of scordatura development. During that time there were few cases of scordatura used in Germany--the Violin Sonata by Bach and two of the concertos of Mozart (mentioned below).

During the seventeenth and eighteenth centuries there were many experiments at what one might call the boundaries of the technical and artistic possibilities of instruments. Passages such as the one below by Stephen Haw, cited in Beckmann's *Violinspiel* (c. 1640) (quoted in Boyden 1967: 167) provide evidence of such experimentation:



It is not clear how such a passage could have been played, at that stage of violin development: either it was a "tour de force" (in terms of today's tuning) or its execution was solved by means of scordatura or additional strings.

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It is not clear how such a passage could have been played, at that stage of violin development: either it was a "tour de force" (in terms of today's tuning) or its execution was solved by means of scordatura or additional strings.

Very often composers did not specify instrumentation in their compositions, and compositions were performed with whatever instruments were available . Sometimes the violin performed the

viola part, or sometimes a wind instrument performed a string part. There flourished many different kinds of “transitional” or “experimental” instruments, such as five-stringed violins or six-stringed violas (see Chapter 1). Interpretation was liberal within certain stylistic norms, and performers employed embellishment and free improvisation. It did not matter if one played a piece in E<sup>b</sup> major instead of D major, since concert pitch was not fixed. Musicians’ attitudes towards the score, indeed the whole question of “authenticity”, was very different from today.

During the late seventeenth century Daniel Eberlin, violinist and composer (1630-1692) calculated that there were about two thousand different tuning possibilities for the violin, and there were more than thirty violin scordatura used (*New Grove* 19: 57). Nowadays we can put all the different kinds of scordatura into two main categories: the “transposition” scordatura (where all the strings are tuned up or down in fifths) and the “free” scordatura (any other form of retuning). The latter can be further divided according to the artistic results and purposes for which scordatura is used, and is more fully discussed in Chapter 3.

Transposition scordatura occurs when all strings are tuned in fifths but a certain interval lower or higher than usual (for example f, c', g', d"). The history of this scordatura is very interesting because it was a daily practice, and a great help to the musicians of the period in establishing pitch, when there were many different choir, chamber, church, and organ pitches, as we have seen in Chapter 1. Bach for example uses transposition scordatura (all strings one semitone lower)

in his *Sonate F-dur fur Violine und Cembalo*, and in Stamitz' *Sinfonia Concertante* for violin and viola both solo instruments are tuned a semitone higher.

During the later eighteenth century transposition scordatura appears again, for example in Mozart's (spurious?) Violin Concerto in D Major (E-flat) ("*Adelaide*", see *New Grove* 12: 741), where the solo violin is one semitone up, and his *Sinfonia Concertante* where the solo viola is tuned a semitone up. Both concertos are in E-flat Major and the raising of the soloists' strings by one semitone allowed the violinist for example to play with greater ease because his fingers seem to be playing in D major and the sound is more brilliant. The viola part is also easier to play, and the viola player shifts only to fourth position instead of fifth, while the sound of the viola becomes clearer enabling it to balance the solo violin and the orchestra. Transposition scordatura appears most frequently, however, in Paganini's works (see Chapter 5). The two main reasons for using transposition scordatura were to accommodate the different pitches instruments were built in, and to increase the sonority and power of the sound of the soloist, within the new concept of the soloist competing concertante-style with the orchestra.

In seventeenth century Italy scordatura was used by Marini (g, d', a', c"), Marco Uccellini, and Bononcini. In Germany it was used by C. H. Abel, G. Arnold, Bruhns, Johann Fischer, J. E. Kindermann, Pachelbel, H. Schmetzer, N. A. Strungk, I. P. von Westhoff, and last but not least, H. I. F Biber (1644-1704). Later we will pay special attention to Biber's fifteen "Mystery" Sonatas which have the most astonishing

scordaturas. In England violin scordatura was used in Playford's "The Division Violin" (1685) and by Thomas Baltzar.

Most scholars agree that the Golden Age of violin scordatura is the eighteenth century. This is true except for the outstanding figure of Biber. During the eighteenth century there were few German composers who used scordatura--J. S. Bach, Joh. J. Vilsmayr, Haydn and Mozart being notable exceptions. Haydn, for example, uses scordatura in the finales of two symphonies - No. 60 in C Major (*Il Distratto*) and 67 in F Major. In France there was Michelle Corette (the first to use scordatura in France--1738) in his "Concerto for Violin alone". (He was a great admirer of the Italian violinist and composer Lolli, who also used scordatura.) In Corette's instruction book "*L'Ecole d'Orphée* --an easy method for the study of the violin..." (Op. 18, Paris, 1738) he speaks of various tunings for the violin: g, d', a', d"; f, c', a', e"; and g, d', a', e". In that day the most popular and most often used were a, e', a', e"; g, d', a', d"; a, e', a', c"-sharp; and a, e', a', d". Other French violinists and composers who used scordatura at that time were J. Lemaire (1739), Tremais (Op. IV, 1740) and J. Bertheaume.

It is interesting to note that the tunings given above favour the sonority of A major/minor or D major/minor, and that the a'-string is not altered, one of the main reasons for this kind of scordatura being to achieve a brilliant sonority in those keys. An example of the kind of artistic practice associated with scordatura at this time is the story of Austrian composer Franz Lamotta(e) (1751-1781): he was invited to Prague to play at a concert when someone tried to lay a trap by placing before him a difficult concerto in F-sharp major, but Lamotte

tuned his violin during the tutti a semitone higher and played the concerto with the greatest ease (Van der Straeten 1/1965: 189).

Italy was the country most dedicated to scordatura in the eighteenth century, and its exponents included P. Castrucci, A. Barbella, A. Lolli, Vivaldi (Violin Concertos Op. 9 No. 6 and 12, and Op. 28 No. 3) Tartini, Nardini (his famous *Sonate enigmatique* is discussed later), B. Campagnoli and Attilio Ariosti in his "Six lessons for viola d'amore" (also discussed later). Antonio Lolli (1728-1802) was a famous violinist who used in his execution octaves, tenths, double trills in thirds, sixths and harmonics. He employed scordatura by lowering the g-string a fourth to d, the other strings remaining at the usual pitch. This scordatura was very popular and there appeared many works from other composers indicated "in the style of Lolli", meaning this kind of scordatura.

From the late eighteenth century, scordatura was considered as one of what were called "special effects". Baillot in his "Effect and Means of Effect" from the tutor *L'art du violon* (1834) said:

They can be associated with any modifications of the sound; thus one can distinguish effects of intonation, rhythmical effects, effects of intensity, timbre, character, simple effects, resulting from a single one of these causes; compound effects, that is to say those resulting from two or a number of causes simultaneously (Baillot, quoted in Stowell 1985: 202).

Baillot divides the term into two categories, "particular effects" and "general" or "prolonged effects". The first are short-term effects like

different kinds of contrast, varied bow strokes or rhythms, nuances, anticipations, while “general” or “prolonged effects” comprise devices used over a longer section or even the whole piece. According to Baillot scordatura is mostly a “prolonged effect” because it is mainly used for a whole piece, but we will see later that there are a few compositions where scordatura is used only in certain moments of the music, as a “particular effect”.

Baillot in the end of one Study in a cadenza-like passage introduced a lowering of the g-string while playing by semitones gradually to d, and continued with this tuning to the end. He also sometimes lowered the g-string down a semitone to facilitate arpeggio playing in sharp keys. Bériot, Mazas and Prume had often tuned the fourth string a tone higher--a, d', a', e". As mentioned earlier, the tone is increased because of the greater tension, and works in D and A keys are greatly facilitated by this kind of scordatura. Louis Spohr retunes all strings a semitone in some of his duets for violin and harp, presumably to accommodate those keys that best suit the harp.

During the nineteenth century the use of scordatura declined in all countries. It appeared sporadically, for example in works by Campagnoli, Bériot, Mazas, Prume, Spohr, Baillot, Joseph Slavik and G. Ernst. The most prominent user of scordatura was Paganini (see Chapter 5), although there were occasional later examples by Saint-Saens (*Danse Macabre*) and Schumann (Piano Quartet in E-flat Major, slow movement).

## Why scordatura was used

Composers were attracted to the new technical possibilities of scordatura and by the new timbres and increased sonority or brilliance offered by the re-tuning and consequent tension changes of the relevant strings. In short, scordatura could provide:

1) New harmonic or sonority possibilities. When a piece of music written in A major is played on a violin tuned a, e', a', e", it sounds totally different from the same piece played on a normal-tuned violin. This is because in the normal-tuned violin the g and d strings will not respond to the harmonic or sonority possibilities of A major or minor. The new tuning and the open strings reinforce the harmonics of chords or melodies played in A major. This is specially true of sixteenth- and seventeenth-century music where modulations are not very common.

2) An increase or decrease in the brilliance of the sound. The best examples of this feature of scordatura occur in works by Paganini. He used mainly a-flat, e'-flat, b'-flat, f" scordatura, and for pieces on g-string alone he tuned it up to b-flat or b. This enormously increased the tension of the strings and hence the volume and brilliance of the sound. The soloist was capable more easily of competing with an expanded (Romantic) orchestra and was able to produce a sound quality suited to the newly-emerging large concert halls and the romantic aesthetic of solo playing (see Chapter 5).

An interesting example of decreasing brilliance by lowering the strings is Bach's F-Major Sonata for Violin and Harpsichord (BWV

1022 - spurious?). This appears to be a revised version of an earlier work for flute, violin and basso continuo in G-major (BWV 1038 - also spurious? Only the bass part, from BWV 1038, is undoubtedly by Bach.). The tuning of the violin in the Trio is g, d', g', d'', and in the Sonata is f, c', g', d''. To recreate the original sound quality of the Baroque flute in the solo violin version, as well as to balance to harpsichord and bring out the original trio counterpoint, Bach tunes all strings of the violin a tone lower in the Sonata.

3) An extension of the compass of the instrument. This is possible by tuning the g-string lower. In the eighteenth century Antonio Lolli lowered the g-string to d thus allowing the violin to provide its own bass line. Isadore Bertheaume in his *Oeuvre II, Sonate pour le violon dans le "stile de Lolli"* (after 1769) makes very effective use of Lolli's scordatura (d, d', a', e"). The first chords are rendered with much sonority by the lowered bass string:



The third chord has four octaves' extension and yet is not difficult to play. Also there is the curious *Sonate enigmatique* by Pietro Nardini, where the music for solo violin is printed on two staves, one with treble and one with bass clef, played simultaneously.

4) Mixed sonorities. In scordatura some strings are tuned higher or lower than normal. Others are not re-tuned at all. This results in a new or mixed sonority. The Isadore Bertheaume example

above can be used here again. The upper strings (specially a' and e'') sound like a violin; the other strings--especially the fourth, lowered to d--sound like a viola or some bass instrument. This way the violin can simulate more than one string instrument. Generally speaking, the more scordatura differs from the usual tuning the less the violin sounds like itself.

5) Imitation of other instruments. This is an extension of what has just been said in number 4 above. Some scordatura are designed specifically to produce effects characteristic of other instruments, such as the trumpet-like sound in Biber's "Mystery" Sonata No 12 (tuning: c', e', g', c'') or the viola d'amore sound. A. Barbella in his "Serenade" and Campagnoli in "Nocturno" used the tuning (a, d', f'-sharp, c''-sharp) to imitate the sound of the viola d'amore--this tuning being similar to that of the four middle strings of that instrument.

6) The means to make execution of certain technical passages possible or easier. Wide intervals, difficult string-crossing or double and triple-stopping which might otherwise be impossible (or belong to the post-Paganini era) were greatly helped by suitable scordatura. An example is Marini's Sonata Op. 8 (1626/9) where the player with the help of re-tuning the e'' string to c'' (g, d, a', c'') is able to play with relative ease and speed passages in double-stopped thirds in sixteenth-notes, which in conventional tuning is a great *tour de force* (see example on p. 23).

Another example comes from Biber's "Mystery" Sonata No 11, where, with the help of the very special scordatura g, g;', d', d'' the soloist can play with much less difficulty than usual the consecutive tenths and octaves:

SCORDATURA 4

WRITTEN

Biber Sonata n. 11

1 2 3 4

sounds

## Chapter 3

### The technique and notation of scordatura

As mentioned already, the first music ostensibly written for violin in scordatura (Marini) was notated according to the required sound, and the performer had to work out his fingering accordingly; in other words the instrument was treated as a transposing instrument. It is not known how many compositions of scordatura were notated this way, but it would seem that this kind of notation was new. All other examples later on are in "hand-gripp" notation, as in tablature, meaning that the notes in front of you indicate not the actual sound required but the finger and string to be played.

Let us look first at the tablature (Fr. *tablature*, German *tabulatur*, Italian *intavolatura*). This is a notational system that uses letters, numbers or other signs as an alternative to staff notation. This system normally uses one symbol to show how to produce the required pitch from the instrument and another to show its derivation, in tabular form. It first appears in the mid fourteenth century and there developed different tabulatures for different instruments (*New Grove* 18: 506). With notable exceptions like the zither, mandolin and ukulele, most of them were eventually replaced by staff notation (Scholes 1970: 1004).

G. Beckmann in *Das Violinspiel* gives examples of two violin tabulatura (see below). He states that there originally existed two

kinds of tablature, German and Italian. Both indicate each string with a line, and for the German the top line is for the g string and the bottom line is for e", the fingers indicated with numbers the same way we use them today (o-open string, 1-first finger and so on). In the Italian tablature the rule of the positions of the string was reversed (top line for e" string) and the fingers were indicated with letters (a for open string, b for first finger...). Although there is some contradiction in the statement of Beckmann about the order of the strings and lines in the German tablature we quote two examples-- "Dantz" by W. Gerhardt and an Italian piece evidently written for violin tuned to g, d', g', d" (no title) from Van der Straeten (1/1965: 37):

The image displays four staves of musical notation. The top staff is a six-line German-style guitar tablature with a treble clef and a key signature of one flat. It features numbers 0-4 on the lines, with some letters 'F' and 'A' above certain notes. The second staff is a standard musical staff with a treble clef, showing a melodic line with various note values and accidentals. The third staff is another six-line tablature, this one with letters 'a' through 'g' on the lines, representing an Italian-style scordatura. The bottom staff is a standard musical staff with a treble clef, showing a melodic line similar to the second staff but with different phrasing and accidentals.

The first is in German tablature and the second is in scordatura. This example illustrates the way scordatura in the so-called "hand-gripp"

notation was really a kind of tablature, although more developed than earlier tabulatures and more related to staff notation:

The performer cannot be expected to read and transpose concert pitch at sight. Consequently, the early masters of the *scordatura* developed the device called the "hand-gripp" position. This is nothing more than a form of tablature in which the violin becomes a transposing instrument and the performer reads the fingerings as though they were in normal tuning (Trainor 1972/3: 29).

The difference between the old tablature and the later *scordatura* is only in the use of different symbols. The former uses numbers, letters, lines and other signs, while the latter uses staff notation to give the same information. The performer should imagine he or she is playing from staff notation as if in first position without paying attention to the connection between the written music and the actual sound. The rhythmic structure is not affected at all, and the performer reads it exactly like ordinary staff notation.

Because of the limited repertory of notes, based on the harmonic series of a particular key, horn players in the past for example had to change the crook (a part of the instrument's piping) to be able to produce sounds in different keys. So a notated c would sound the note f if played on a horn with the F crook, g if the G crook was used, etc. In the case of the violin, instead of shorter or longer 'crooks' the player uses strings with higher or lower pitch and plays exactly as a horn player would. For example: if the second string is tuned to a, the second finger plays c'; if the same string is tuned to b, the same finger

produces  $d'$  like a transposing wind instrument "in D". That is to say, the "normal" tuning of the violin is like a violin "in C" and when any of the strings are retuned it becomes a transposing instrument.

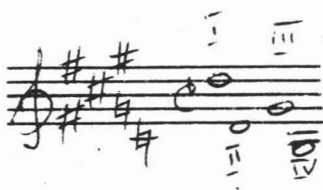
Furthermore, violin scordatura is in a way more flexible than wind re-tuning, since each string can be retuned in differing degrees, or the transposing interval can be different for each string. For example if the violin is in scordatura a, e', b', f'-sharp, this means that the whole violin is tuned one tone higher and the performer will play the same way as a wind instrument in D. Alternatively, if the violin is tuned g, d', g', b' half the violin is normal ("in C") and half is transposing, and so on.

Although the two systems of scordatura--transposing (writing according to the actual sound) and tablature ("hand-gripp") notation--were equally flexible for string instruments, "hand-gripp" notation was far more common, presumably because it was more mechanically executed. The relatively few cases of transposing notation do not give any information about the fingerings: these have to be discovered and learned by the performer (see Chapter 6).

In order to play either transposing or "hand-gripp" scordatura, performers had to be familiar with the music and adept on their instrument. I will now look at other kinds of technical feats required and problems raised by using scordatura, and discuss some of the rules of scordatura playing and the main problems and disadvantages which can arise.

## Rules and problems in scordatura

Like every device scordatura has its own “rules”(or regular practices) which make it possible to employ this way of playing the violin. Most of the rules are connected with the violin technique of a particular time and are reflective of the standards of this art. The first was that the change in tuning was always written by the composer at the beginning of the piece. The second was always (unless specified otherwise) to use first position; thirdly, to use only open strings, not fourth finger (unless indicated otherwise). This was in keeping with the average violin performance practice of the sixteenth and seventeenth centuries. (Remember the wider and shorter neck of the violin, and the fact that with gut strings there was not much difference in sound quality between open and stopped strings.) Of course there were violinists who could play in high positions, who managed to use the fourth finger even in extensions, but they were exceptions. Also there was a work by Ariosti where there are given other, different rules of scordatura playing (see Chapter 4), which although they are based on those mentioned here, are nevertheless unique. The fourth rule was that all the accidentals in the signatures apply only to the note in question, not to the octave below or above. As a result, there often appeared very strange key signatures like in Biber’s “Mystery” Sonata No 11:



The key signature in this scordatura (in “hand-gripp notation”) must indicate and sound G major and each sign shows us whether we

should play the sharp, flat or natural. For example, the first finger on the first string (where in usual tuning we play f<sup>''</sup>) should be sharp (like f<sup>''</sup>-sharp), producing with this scordatura e<sup>''</sup> and the third finger on the third string (where we used to play g<sup>'</sup>) should be natural producing c<sup>''</sup>, and so on.

The problems and disadvantages are more numerous. Some of them seem to me not as serious as some authors have stated. I have identified eight and I will discuss each one separately.

1) Scordatura may lessen the range of the instrument. Most scordatura involves lowering the highest string or tuning the lowest string up, and this lessens the compass slightly. Few violinists in the Baroque era used the violin's top tones and positions. It was said that Thomas Baltzar played to the end of the fingerboard of his violin, but again the Baroque fingerboard (the part over the body) was 3-5 cm shorter than it is today (Gill 1984: 19).

We know that the best violin virtuosi in Germany in the seventeenth century, like J. Walter, played to sixth and seventh positions, and this should be really the end of the fingerboard in that time. Despite the great achievements of that time, the average violinist did not usually exceed fourth position, as is reflected in compositions from that period. Even today, how important for the composer would it be if the violin did not have its highest two notes of the compass? In my opinion this first problem or disadvantage is not so great.

2) Special notation and playing rules have to be observed (according to David Boyden). I don't think this is a serious problem. Maybe today when the theory and practice of scordatura is nearly forgotten (although lately more recordings of this way of playing are available) these rules seem difficult. But during the time when this was a flourishing art it was popular, often used (even in ensemble playing) and reflected its origins from tabulatura and playing in transposition. It is more of a problem when the music in scordatura is written not in "hand-gripp" notation, but according to the real sound. In this case the performer has to work out and learn new fingerings for each scordatura or piece of music. Examples of such scordatura are rare, like Marini's Op. 8 (1625-9) and Gnessin-Szigeti's *Spielmannslied* in the twentieth century.

3) A much bigger problem not mentioned in most books is that today most violinists have lost (or never had) the ability to reproduce different pitches within the same place on the same string. This means that for them the second finger first position on the a' string is always c" or c"-sharp. In scordatura playing this could be any other tone (like in transposing instruments). When the strings are retuned the violinist is confused and there is a considerable conflict between the sound picture and the usual finger technique. Even when the whole violin is tuned a semitone higher, today's performer used to the absolute pitch of a'=440, begins to think in sharp or flat keys and there is an interference with the usual finger positions and the resultant intonation and sound quality. This was the impression I had myself when I started to play some compositions in scordatura. But it is a problem one can work at with practice and experience.

4) A similar problem with the same solution is the thickness of the strings. In some scordaturas like g, g', d', d'' as used in Biber's "Mystery" sonata No.11 the performer has to exchange the places of the second and third string, because the pitch of this scordatura is too low (fifth) for the usual a-string, and too high (fourth) for d-string. Every string has a certain thickness according to the pitch it should produce. Small differences in thickness between the same two strings (for example D) result in different sound qualities. If the interval difference between the designated string and the scordatura is too large (like in the example given) it could result in difficult 'speaking' of the string or poor sound quality (too large or too small tension of the sound). In the past there were lots of different kinds of strings, mainly gut and wound gut. It is still possible today to find a range of strings and to make a choice according to need.

Gut or wound strings are much more suitable for scordatura playing than steel strings because they are more flexible and more sensitive. So in the example from the Biber sonata given above, it is absolutely necessary to change both middle strings. The d-string (now no. 2) will have the same pitch for which it was designed and the a-string (now no. 3) will be only one tone lower. This is excellent solution but it causes inconvenience for the player's fingers when instead of a thin string he touches a thick one and vice versa.

5) The instrument is hard to keep in tune. If for some compositions or passages in scordatura a violin tuned in the normal way is retuned, it is difficult to keep in tune because the instrument's construction adapts slowly and in different areas to the new tensions

and vibrations. One can manage this if the change is not large and the passage in scordatura not very long. Otherwise, one may need a second instrument tuned beforehand in scordatura. It is said that Paganini (a great master in scordatura) always some time in advance stretched strings in different pitches according to his needs. Also, it is significant that the violinist Sonja Monosoff for her recording of the whole set of *15 Sonatas for Scordatura Violin and Basso Continuo and Passacaglia for Solo Violin* (known as the "Mystery" Sonatas) by Biber, used six different instruments! (Boyden 1963: 401).

There are a few compositions where the performer is required to retune during some bars of rest or between the movements (Marini, Baillot in *L'art du violon*, Schumann (Piano Quartet), Stravinsky (Firebird Suite) and Bartok (*Contrasts* for violin, clarinet and piano, last movement). A striking example of such retuning occurs in Schnittke's "A Paganini" (To Paganini) for solo violin (1934), which requires retuning while playing the g-string gradually downwards to C-sharp. Another example, which I have myself played, is the *Rhapsodie Vardar* by Vladiguerov, where the violinist has to retune the g-string down to e and later back again, while playing on the string. The retuning is fixed melodically (g to f to e) and is rhythmically organised to fit the piano accompaniment:

The image shows a musical score for a violin and piano. The violin part is on the top staff, starting at measure 220. It features a scordatura marked with an asterisk (\*) and a 'molto ritardando' tempo marking. The piano accompaniment is on the bottom two staves, featuring triplet patterns and dynamic markings such as 'dim.', 'mp', and 'p'. The score includes various musical notations like slurs, accents, and dynamic markings.

\*) Le baissement de la corde Sol doit se faire de la manière suivante: F :::: - signe du baissement

Although at first this was risky, it was not difficult to learn to turn the peg in tune with and in time with the piano. The tuning back to g is more difficult to control than the tuning down to e, probably because of the rising tension involved.

At the beginning of the *Firebird Suite* by Stravinsky the first violins are required to glissando in natural (open) harmonics in a high position on an e" string lowered to d". Before and after this there is a number of bars' rest. Today with steel e"-strings all violinists (even great soloists with outstanding instruments) use fine tuners, because metal e-strings are more difficult to tune with the peg than gut strings. But sometimes the screw of the fine tuner is not long enough, or needs a special preparation (adjustment). Many orchestral players don't like this retuning and sometimes refuse to do it, choosing instead to play the same glissando an octave lower on the d-string.

6) Higher tuned strings result in greater tension, which is hard on the strings and if extended over long periods hard on the instrument. This is true especially of the more valuable older instruments, which are highly sensitive to such changes. Some old violins have had many repairs, cracks or are "tired", and often it can be dangerous to use them for scordatura. So careful consideration has to be given as to what instrument to use. For the strings the case is not so dramatic. Today you can still find many makes of strings in different thicknesses and strength and one can more easily make the right choice. (They are also much more durable than the strings used when scordatura flourished.)

7) “In scordatura the instrument loses its characteristic sound,” (David Boyden, quoted in *New Grove* 17: 57). I don’t altogether agree with the premise on which this statement is based, because one of the reasons for using scordatura is to imitate other instruments, to create different colours and timbres and to produce mixed sonorities-- all of which means the violin must lose its characteristic sound to a greater or lesser extent.

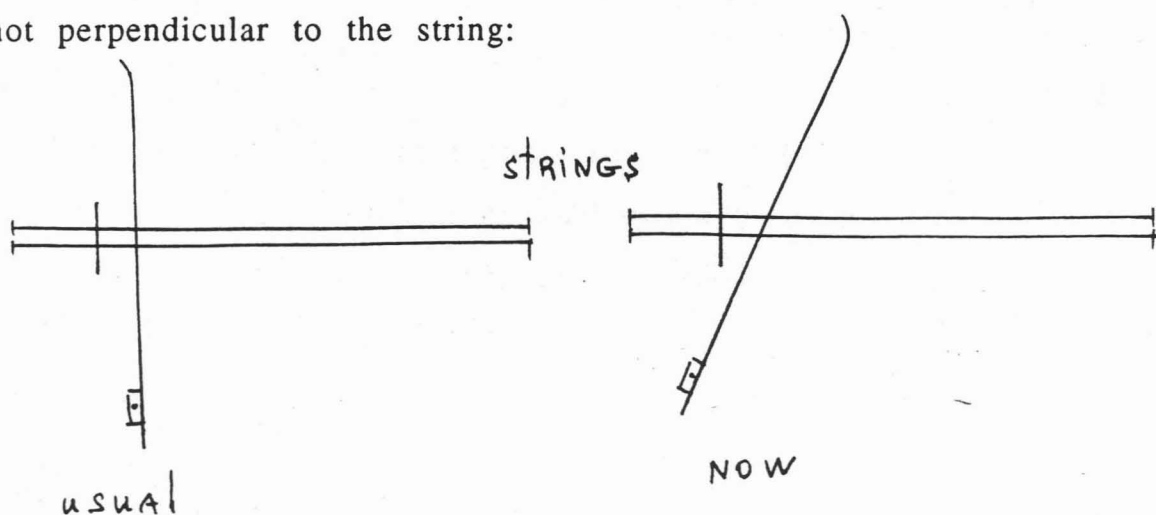
8) There is another problem, arguably the most important in scordatura playing. Surprisingly, most authors neglect it, or don’t mention it, perhaps not being violinists themselves. One person giving attention to this problem is Robin Stowell in his *Violin Technique and Performance Practice*: a “further technical problem to be overcome... is the need to adapt such bowing consideration as the contact point, bow speed and pressure to suit string textures, tensions and thicknesses”. Carl Flesch wrote in *The Art of Violin Playing* (and every violinist also knows it from practice) that every string, every position, dynamic, nuance, kind of bow stroke require a special contact point of the bow with the string. It is sometimes difficult to find this contact point, for example in a work like Paganini’s Capriccio No 6, where the violinist has to play the whole time double stops with trills:



Very often the sound in performance of this work is unsatisfactory because it is impossible to find one contact point of the bow suitable

for these—three different lengths (with the appropriate tensions) of the string. Ultimately the performer has to choose the best compromise.

In the *Rhapsodie Vardar* example given above, there are two different lengths of string, covering about two octaves. As one of the strings is retuned from g down to e, it has less tension than usual. The tempo is fast and there is a continual crossing of two strings with a melody line to be well articulated at the same time. A melody played on the d-string in high position can sound very dull, and the retuned (open) first string sounds harsh. Yet these timbres are important to the piece because this is an imitation of the playing of folk instruments, the drone and the melody. One of the main difficulties in playing this passage is to contact two different points of the strings with the bow, one nearer the bridge than the other, using very little bow. On the retuned g-string one has to play far from the bridge, and on the d-string closer. Different pressures of the bow might help, but the tempo is very fast here. The best solution is to bow at a certain angle not perpendicular to the string:



## Chapter 4

### Outstanding scordatura works: Biber, Nardini, Ariosti, Bach

At the beginning of the violin's development scordatura reflected the many different origins of the instrument and the different performance practices and conditions during the Baroque. It was a means to facilitate the fingerings, whereas later it rose to independent artistic and aesthetic status, which in the hands of certain composers flourished like never before or since. There is no parallel amount of effort spent on scordatura in other string instruments; the nearest in scope are the lute and viola d'amore. Scordatura remains largely the prerogative of the violin.

The first violin composer to achieve outstanding examples of scordatura was Heinrich Ignaz Franz von Biber (1644-1704). He used various retunings of the violin in his *Sonatae violino solo*, where two of the sonatas, Nos. 4 and 6, were tuned to a, e', a', d' and g, d', a', d'' respectively. In his seven Partitas for two instruments and bass *Harmonia artificiosa-ariosa* he used in six of them different tunings, sometimes in both solo instruments. In total Biber wrote twenty-two works in scordatura, mainly for violin, using a total of eighteen different tunings. Each tuning is for the duration of one complete sonata; there are no retunings between or during movements. In his *Fifteen Sonatas for Scordatura Violin and Continuo* and *Passacaglia for violin solo* (c. 1676) he reaches the apogee of early Baroque violin

playing. —They are outstanding in many aspects, and deserve special attention.

Today these works are known as the “Mystery” Sonatas, although this title is not Biber’s but comes from the fact that in the original edition each sonata was accompanied by an engraving that depicts one of the Mysteries of the Rosary. It is assumed that they were performed as postludes to church services during October, the month specially devoted to the Rosary Mysteries at Salzburg Cathedral (Gill 1984: 68).

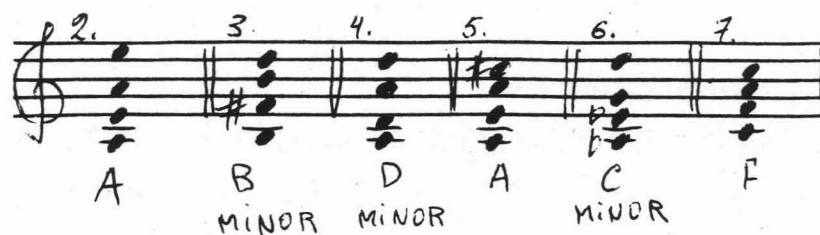
The titles of the “Mystery” Sonatas are:

1. The Annunciation, 2. Mary’s Visit to Elizabeth, 3. The Nativity, 4. Presentation of Jesus in the Temple, 5. 12-year-old Jesus in the Temple, 6. Agony in the Garden of Gethemane, 7. The Flagellation, 8. The Crowning with Thorns, 9. The Carrying of the Cross, 10. The Crucifixion, 11. The Resurrection, 12. The Ascension, 13. The Descent of the Holy Ghost, 14. The Assumption of the Virgin, 15. The Coronation of the Virgin, 16. “Pasacaglia” - St. Michael, the Guardian Angel.

Although the Passacaglia is not a sonata as such, and is unaccompanied, it is usually listed as one of the “Mystery” Sonatas.

According to David Boyden the programmatic element is not always present and is confined mainly to the first movements. He writes that “Biber is at his best when he is suggesting moods rather than pictures” (1963: 398). The first Sonata and the final Passacaglia are in normal

violin tuning. The other sonatas are respectively in the following tunings:



Most of these tunings are related to the main key of each sonata, thus reinforcing the sonority of the instrument within a particular key context. The tunings allowed advanced technical possibilities for that time, such as multiple stopping in octaves, tenths (No. 11), unisons, and trills in thirds (No. 13). The most 'way out' scordatura in the set is No. 11 - g, g', d', d''. It is necessary here to exchange the second (a) and third (d) strings to avoid an enormous tension on the strings and the belly, which might result in broken strings. This scordatura allows the player to produce different effects and sonorities and facilitate the playing of wide intervals, e.g.:



It is remarkable that Biber should have such a clear imagination of sounds and passages never before attempted on the violin.

The tuning of No. 7 to c', f', a', c'' creates the practical problem of deciding between two choices of strings for the c''- whether to use the e''-string tuned a major third down or the a string tuned a minor third up. The same kind of choice presents itself with the third string, which can be d tuned up or a tuned down. The only solution is to try different combinations of strings, bearing in mind that the tensions will be different from normal. The worst combination, for example, would be to use the g-string tuned up a fourth to c' (large increase in tension) together with the e''-string tuned down to a' (large decrease in tension), resulting in the fourth string sounding harsh and powerful and the first string sounding dull and weak. I would try the following solution, which would keep the sound of the instrument homogeneous:

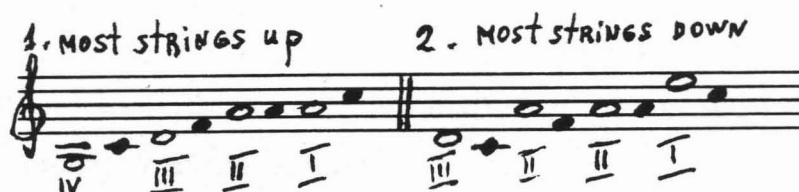


Example No. 1 is with increased tension and No. 2 with decreased. The white notes show what kind of string one should use and the black notes show how to tune them.

Some instruments react extremely sensitively to the changes in tension that come with different tunings, as if they were more, or less, "suited" to them. I have experimented myself with inexpensive violins. In the scordatura solo in the second movement of Mahler's

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Fourth Symphony, which I have played many times as Concert Master, I have found that not every violin (even of very good quality) is suited to this passage. To summarise, different violins react differently to different scordaturas, according to the way the violin is constructed and what its dominant characteristics are.

In Biber's time it was easier to find strings of different thickness, and most strings were made of gut, which is more flexible than metal or plastic, and more easily retunable. Today we have to search harder to find the right kind of strings for scordatura, indeed for any kind of 'authentic' string sound when playing early music.

Keyboard players of Baroque sonatas in manuscript face the problem that scores from that era were mostly written with the violin part in "hand-gripp" notation - i.e. playing pitch rather than sounding pitch, and have to transpose the melody by ear in order to play the realisation of the bass. Modern editions sometimes provide the score in both ways - transposed and untransposed, or in scordatura and in real sound, so as to avoid errors.

In conclusion, the "Mystery" Sonatas were enormously important in the development of scordatura and violin technique in the seventeenth and eighteenth centuries. The symbolism at work in the pictorial elements of these pieces, as with many compositions of the Baroque, is undoubtedly also of great significance. For the purposes of this dissertation, however, the technical and melodic elements have been stressed, and it is in respect to the interesting technical demands Biber makes that the set has been more neglected than it deserves.

Possibly one of the most curious examples of eighteenth-century scordatura is found in the *Sonata enigmatique* by Pietro Nardini. A note on the score says: "By means of this tuning one can play his own bass" (Russell 1938: 93). The retuning of the violin is c', f', a', e''. This work is written for solo violin but the notation is on two staves:

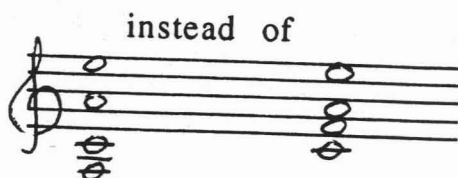


Both staves should be played simultaneously. Boyden explains it by saying that "the upper two strings, normally tuned are played with the normal fingering from the G clef, on the upper staff, but the lower two strings, raised to the pitches shown, are notated in the bass clef on the second staff an octave below normal" (1967: 69).

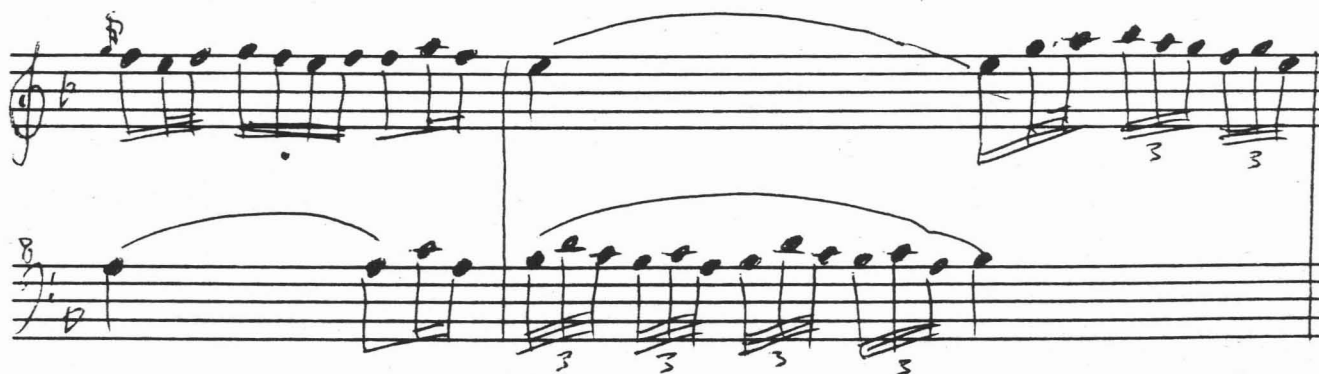
However in the second bar (marked \*), the melody on the upper staff is impossible to play on the second string (a') because it is too low. So the melody in that bar on the d'-string (retuned) is notated on the upper staff and the bass in the lower. We can say now (unless there is a misprint in the music) that the staves are generally not fixed with any strings - usually the bass staff is for the retuned g or d'-string and the d'-string can have a dual role - to be used for melody or bass.

The accompaniment is written in F clef one octave below. This means it should sound octave higher.

Although Theodore Russell doesn't deal with this problem he does mention that the bass effect is not realised because the strings are tuned so high. He writes, "This probably looks better than it sounds" (Russell 1938: 93) and offers another tuning which will provide a more successful bass:



There is an interesting use of the second stave in the use of arpeggios and the display of two complementary and independent melodic lines (here the e''-string is notated on the first stave and a'-string on the second one):



This way of writing is very similar to that for keyboard instruments, and although it is not familiar to today's violinists, it does indicate clearly the polyphonic lines of importance. It would be nice to provide this music with a low bass line (like that offered by Russell) but this is impossible without changing the prescribed scordatura. We know from Bach's unaccompanied solo partitas and sonatas that it was Baroque practice to write polyphonically for one instrument, to provide 'accompaniment' in the same register or on the same string. A well-known example is the Andante from Bach's second solo violin sonata:

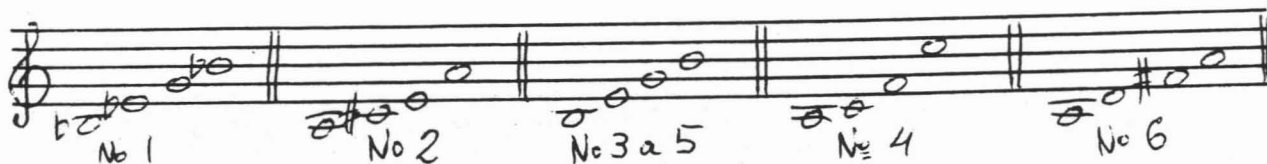


This example and many others show that accompanying figures do not require the lower string(s) to be retuned at a much lower pitch, and that the prescribed tuning in the above example from Nardini's scordatura is very reasonable - it doesn't need a change.

Arguably the most sophisticated and unique way of writing violin scordatura was done by Attilio Ariosti in his *Six Lessons for viola d'amore and continuo* (1724). Ariosti was an eminent Italian viola d'amore virtuoso, composer, organist and cellist, who lived in Italy, Germany and finally England. He was well known as a composer of opera and chamber music, especially for viola d'amore. The first information we have about this instrument is from the seventeenth century. There were two types of viola d'amore, one a small viol-

shaped instrument with metal playing strings and no sympathetic strings, the other a larger model with sympathetic strings. The number of strings varied and there was no standard tuning (*New Grove* 19: 816), the practice of the seventeenth and eighteenth centuries being to tune the viola d'amore to the key of the performance. Mattheson and Walther write that the instrument was tuned in C major or minor - g, c', e'/e' flat, g', c'' - but there were in fact wide variations of scordatura tunings. Joseph Majer writes of about sixteen tunings for the instrument current in 1732. At the end of the eighteenth century the standard tuning of A, d, a, d', f' sharp, a', d'' (D major) was established (*Ibid.*).

Some of the music for viola d'amore was written at sounding pitch (Bach, Graupner) but mostly the music was written in scordatura, where the four highest strings corresponded to the four violin strings (g, d', a', e''), thus playing like a violin in scordatura no matter how the viola d'amore strings were tuned. The notes for the other three bass strings were written in the bass clef and sounded an octave higher. So Ariosti's *Six Lessons* all sound in the violin register (without using the lower bass strings); the fingerings and hand positions all suited to violin playing. Ariosti says in his preface that the purpose of this work was to introduce the viola d'amore to violinists. This is clear from the tunings given for each Lesson:

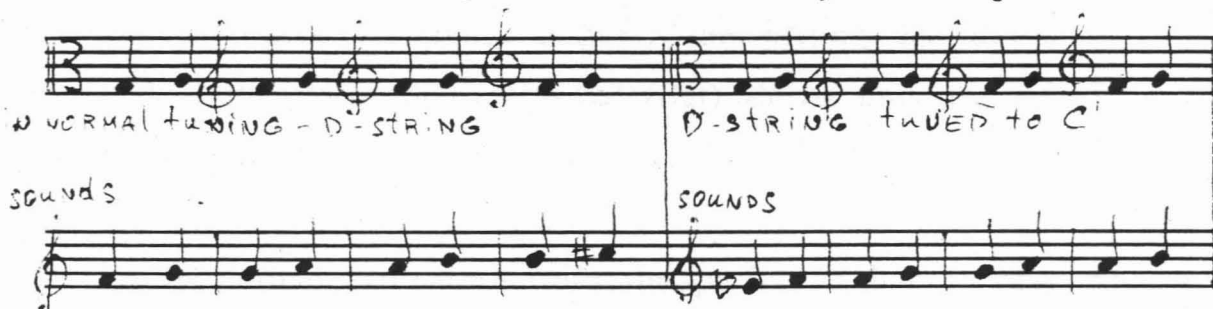


Each tuning is determined by the key of the Lesson, in this way facilitating multiple stops and increasing the response of the instrument and the resonance of the principle chords in each key. It seems that Ariosti's notation was unique and original, and was not readily accepted or understood by his contemporaries. He supplied a fingering chart demonstrating the notation of his fingerings and hand positions, with musical examples. Thus we can derive the following rules applicable to the performance of these works (adapted from Boyden 1946: 547):

- 1) The performer has to play the music as if it were written on the violin G clef first position, and the fingers should always be placed as if in first position regardless of where the hand is. This is related to the following rule.
- 2) There are in use four different keys without any pitch or transposition significance. They are to show the performer the use of the four first hand positions:



so the fingerings are always like the performer plays in first position, independent of what clef (position) is written by the composer:



Another example on the third string in scordatura e'-flat:

written

sounds

Here using the second finger, the notation is the same (except the clefs) but the end result is different. Again we have to remember the tabulatura technique of playing and the different transposing (clefs) practice. Giving the accordatura (tuning), fingerings, positions (clefs) and accidentals by Ariosti *for Lesson 1 in E-flat Major* we can understand and solve some of the problems that arise:

FINGERING

position

SOUNDS

In both the places marked with  $\wedge$  (semitone) we can see that there is sometimes a drastic difference between the writing and the actual sound. In both places the accidental (flat) shows only the correlation between the previous and next tone - to move the finger a semitone or whole tone as marked with  $\lrcorner$ .

3) As in normal scordatura rules the performer has to play always open strings when possible regardless of the position unless specified

otherwise by Ariosti with the usual fingering number over the note. Also the rule about the accidentals in normal scordatura remains the same. Third position is the one most frequently used, also often the second, with great success. Fourth position is used as an extension of the first string. This complicated system is used by Ariosti with great artistic skill. He very often exploits colouristic possibilities which result from using different strings and positions, for repeated passages.

There are many points of debate in both the edition by Piatti and that of Saint George, and the original is sometimes very puzzling. Only one of the *Lessons* (No. 2) is supplied by the composer with figured bass and this can give the keyboard player information about what harmonies to play, whereas the other five do not have figures.

The *Six Lessons* are far beyond studies thematically - they are exquisite works in sonata da chiesa and da camera style; most of them are in four movements, some in three, and they should be treated as serious contributions to the chamber music repertoire.

To summarize, I would like to quote David Boyden on the *Lessons*:

[T]hese *Lessons* reflect a middle of the road attitude towards violin playing... the notation of the *Lessons* is unique, as is the combination of factors represented by the *Lessons*: namely, an Italian, known principally as an opera composer, writing pieces

in a German-Italian style for English violinists to play in scordatura and in a tablature-like notation on the viola d'amore (1945: 561).

It is important to remember that the violin and other violin-like instruments were interchangeable, as far as the players were concerned. The same applies also to the violino piccolo. In Bach's *Brandenburg Concerto No. 1 in F Major* the tuning of the violino piccolo was a third higher than usual violin tuning--b-flat, f', c', g", which was probably considered more suitable (instead of the above-mentioned c, g, d', a') for the key of F major (see extract from first movement below). As far as the tuning of the strings and the fingerings were concerned, it was thus playing like a transposing instrument in E-flat. Maybe the transposition was also influenced by the different concert pitches existing at that time.

In the third movement of the same work, the section from bar 21 requires enormous effort, not to say virtuosity, to play correctly and with the required vigour in normal tuning, without sounding harsh or arpeggiated (especially bars 26 and 31):

The image shows two staves of musical notation. The first staff begins at bar 25 and contains a complex, fast-moving melodic line with many sixteenth and thirty-second notes, along with some rests and slurs. The second staff begins at bar 29 and continues the melodic line, featuring similar rhythmic complexity and some dynamic markings like 'p' and 'V' (forte). The notation is dense and technically demanding.

With violino piccolo tuning it becomes much easier, bar 26 being played as follows:

Handwritten musical notation for two staves, starting at bar 25 and ending at bar 30. The notation is in treble clef with a key signature of two sharps (F# and C#). The music consists of eighth and sixteenth notes, often beamed together in groups. There are several 'o' markings above notes, likely indicating natural harmonics or specific fingerings. The notation is somewhat sketchy and appears to be a personal study or performance guide.

Instead of using second position and not always safe extensions of the third and fourth fingers these passages can be played in first position using some open strings, with good resonance and a clearly audible theme. Even if violino piccolo is not used in modern performances, it is advisable to use a retuned violin to play this Concerto, so that the quality of the sound and the clarity of the polyphony are not sacrificed.

On following page the opening bars of the Brandenburg Concerto No. 1 in F Major show how the violino piccolo part is scored as if for a transposing instrument.

# KONZERT F-d

Brandenburgisches Konzert Nr. 1

Joh. Seb. Bach (BWV 1046)

\*) Corno I  
Corno II  
Oboe I  
Oboe II  
Oboe III  
Fagotto  
\*) Violino piccolo  
Violino I  
Violino II  
Viola  
Violoncello  
Continuo e  
Violone grosso

The musical score is written for a full orchestra. It features 12 staves, each with a specific instrument part. The parts are: Corno I, Corno II, Oboe I, Oboe II, Oboe III, Fagotto, Violino piccolo, Violino I, Violino II, Viola, Violoncello, and Continuo e Violone grosso. The score is in F major and 3/4 time. The key signature has one flat (F major). The tempo is indicated by a common time signature (C). The score is written in a standard musical notation with various dynamics and articulations. The page number 58 is centered at the bottom of the page.

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## Chapter 5

### Paganini and scordatura

*"Ognum'a suoi segreti"*

*(Everyone has his secrets)*

Paganini

Many books have been written about Paganini by both scholars and lay people. It is not necessary to add any introductory words about him here, except to express regret that so much of what has been written about Paganini dwells on his private life rather than on a concrete discussion of his work, technique and methods. There are some reasons for this. Firstly, Paganini himself did not wish to reveal the secret of his art and methods. Even during his lifetime the only works published were the *24 Caprices* for solo violin (Op. 1, 1820). Of the works written for violin and orchestra the solo violin parts were never written down and consequently were not seen by anyone. The orchestral parts were given out before the rehearsals and concerts and collected afterwards personally by the composer. He wanted his work and person to be shrouded in mystery, and this was in keeping with the romantic spirit of the time, which indeed Paganini did much to foster.

Secondly, information about him has been handed on from one generation to another by oral tradition even though written down, and is more in the nature of praise poetry than description of the technical

devices he used in his playing. Thirdly, most musicians of his time were not prepared for this outstanding appearance. Paganini did not belong to any particular violin school and seemed to have no predecessors, so there was no-one to compare him to. Even today only a handful of violinists are really familiar with his music and technique, and understand the way he has achieved it.

Paganini was the greatest exponent of violin scordatura during the nineteenth century, yet it is paradoxical that we have more documentation about scordatura practice in Bach's time than in Paganini's. He used two kinds of scordatura: the transposing scordatura where all the strings are tuned one semitone up, and the famous re-tuning of the g-string for pieces written for only one string. Regarding the transposing scordatura: today many professional violinists do not know that his Concerto No. 1 was originally written not in D major but in E-flat major (*New Grove* 14: 90). The original orchestral parts are in E-flat major and Paganini played the solo part in scordatura, all strings tuned a semitone higher. By using fingerings for D-major on the retuned violin (a-flat, e' flat, b'-flat, f''), the concerto would have originally sounded in E-flat.

Similarly, the violin part to his variations on the air "Di Tanti Palpiti", which is in B-flat major, was written in A major for a violin tuned up a half step (Fétis in the Biographical Notes to the AMS Edition, 1976, 87). Dominic Gill says that the variations "Le streghe" were also played on a violin retuned up (1984: 125). Fétis' Biographical Note also mentions that the air with variations from *La Cenerentola* ("Non piu mesta") is written in E-flat for the orchestra with the same violin

scordatura. G. C. Conestabile (1936) refers to two violin concertos not known today, one in B-sharp minor and the other in E-sharp minor (!), and Frederico Mompelio in a note to the same reference presumes that the soloist should retune a semitone higher since these are very difficult and unusual keys for the violin.

My guess is that these concertos, if they really existed, could be in the enharmonic equivalents C minor and F minor respectively, in which case they are not difficult to play - unless this was some kind of musical joke. Otherwise, on a violin retuned up a semitone the violinist could play in B minor and E minor.

In the case of the other kind of scordatura - tuning the g string higher - it is not known exactly how much Paganini raised the pitch.

Probably the best-known example is the *Variationi sulla Preghiera dell'opera Mose di Rossini sul 4ra corda per violino e orchestra*, known as the "Moses Variations" (c.1819). Baillot explains that in performance the fourth string was raised to b-flat or b, and he notes that the b gives more sonority than the b-flat, which is to be expected, given the sympathetic resonance of the other strings (Stowell 1985: 234). The edition of Wilhelmj (Schott) uses the b-flat tuning. K. Mostras, Russian musicologist and violinist, thinks that the rise of a minor third to b-flat creates too much tension in the string for it to keep in tune throughout the piece (1948: 42-44). He takes into account the fact that from the beginning of the eighteenth century to the middle of the nineteenth century concert pitch rose more than a tone, and feels that Paganini intended the string to be raised by only one tone.

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Another opinion is given by Riso-Rangabe, who states that the orchestral parts of a fuller version of this work are “not the one known and published (1855, Hamburg, Schuberth & Co.) in the keys of E-flat minor and major, but exclusively a much fuller version of the Sonata in F minor and major” (1958: 380). This means, according to Mr. Rangabe, that when Paganini played it he “raised the G string the full interval of a perfect fourth to C!” (Ibid.).

It is difficult to say who is right. In my opinion K. Mostras is forgetting that although the pitch in Paganini’s time was lower than now, violins were made with the old (Baroque) construction (thin and short bass bar and thin sound post) and for this construction the rise in tuning with certain intervals should be relatively the same. What is important is not the absolute pitch (in Hz) but the relative one - the difference between the pitch at that time and the accordatura of Paganini. So there is no reason today to retune the g string only to a.

In many writings on Paganini it is said that the maestro often broke the three high strings during performance, for effect or by accident, and continued to play only on the g string. Given Paganini’s virtuosity and showmanship, this is quite believable. If one experiments by loosening the pegs of the three upper strings and playing on the fourth (g), its pitch will automatically rise about a tone. This happens because the loosening of the tension on the belly conducted by these three strings is transferred to the g string and augments its tension. Thus every time Paganini broke a string the pitch of the g string rose, so he continued at a higher pitch (in scordatura).

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Paganini composed a number of other pieces for the g string only, such as the “Napoleon” Sonata, the “Maria Luisa” Sonata, the Sonata “Militaire” and the “Maestoso” Sonata (*New Grove* 14:90). Some of these are lost, some only exist in a few surviving orchestral parts, others remain unpublished, and we do not know how Paganini used the retuning. Robin Stowell (1985:236) claims that in the three ‘Airs varies’ (also only on the fourth string) it should be raised to a. The “Moses Variations” remains the most well-known piece of this kind, and Wilhelmj’s tuning of the string to b-flat the most common retuning today.

Most writers agree that Paganini used different quality and thickness of strings to suit the occasion (for the retuned g string he used a thin string), and kept them permanently stretched to the required pitch (Guhr 1829, quoted in Istel 1930: 104). Paganini’s contemporaries commented on the uniqueness of his tuning:

His manner of tuning the instrument is wholly original, and to me appears incomprehensible in many respects. Sometimes he tunes the first three strings half a tone higher, while that of G is a third lower than ordinary. Sometimes he changes this with a single turn of the peg, and he invariably meets with due intonation, which remains calm and firm (Guhr quoted in Dubourg 1977: 144).

And later: “His manner of tuning his instrument contains the secret of many of his effects, of his succession of chords, and striking

vibrations, which ordinarily appear impossible to the violinist" (Ibid.). Another contemporary report, quoted in Istel says that Paganini used "a swift tuning up or down of the strings without interruption in the most difficult bravura pieces" (1930: 105). The musician Luigi Pichintini witnessed an occasion when Paganini arrived late to play at a social gathering, refused to tune his violin, and after an astonishing recital Pichintini compared the a' of the piano with that of the violin and found that they differed by a whole tone.

Much was written about the "secret system" of Paganini during his lifetime and later, without anyone being successful in uncovering it. Many of the devices used by Paganini (including the scordatura) are hard to believe, and some are dismissed today as apocryphal, the products of Paganini's mythologisation by the Romantics. Paganini himself said that "the instrument shows itself full of latent possibilities hardly suspected before... but I must warn against the mistake of seeking this secret, whose utilization requires brains, in my system of tuning or (still less) in my bowing alone" (quoted in Istel 1930: 108).

In a report from a concert in Erfurt in 1829 we read:

The frequent audible retuning of the G-string shows the great confidence of the master in his wonderfully keen hearing and selftaught fingerings. In order to employ the harmonics in the remotest keys, he in a second, attunes his strings to another key in an almost inexplicable manner (Op. cit. 113).

Even a non-professional like Dr. Bennati wrote in 1831: "He has often shown this perfection [of his hearing]... in an amazing manner by playing correctly on a violin that was out of tune"... and further on: "Amidst the deafening agitation of the percussion instruments in the full orchestra, the slightest touch of the finger suffices him for tuning his violin" (Op. cit. 111).

Apart from the raising of the g string to b-flat, b or even c' and the tuning of the whole instrument one semitone higher, it was also reported that he used the scordatura tuning - b-flat (or a-flat) e' flat, b' flat, f" (Op. cit. 112). "The notion that he tuned or untuned the violin while playing (entertained at first by Guhr himself) may therefore (so Guhr asserts) be dismissed as mythical, although affirmed elsewhere" (Op. cit. 104). All contemporary references to Paganini in various ways mention his unique style of tuning and retuning, and there is general agreement that he raised this technique to the level of a 'system'. As stated earlier, he did not belong to any school of violin playing. His genius kept him from belonging to any particular tradition, and maybe even today we still do not understand the extent of his technical method, so well has he kept his secrets.

The reasons for Paganini's use of scordatura were very significant, and are linked to the times in which he lived. One can assume that scordatura facilitated some extremely difficult technical problems, although how exactly this worked is not always clear. Another reason is purely aesthetic. After the French Revolution religious, political and social conditions changed dramatically in north-western Europe, and

the new bourgeoisie demanded reform in the matter of 'taste' in the arts as well as other kinds of reform. The expansion of the symphony orchestra and the use of increasingly large concert halls developed concomitantly. Performers were obliged to cope with these changes, and may indeed have helped to bring them about.

Paganini was the first outstanding virtuoso of the new times. Although some of his technical feats may have been performed before, he was the first to combine them to such a full extent, together with introducing new ones such as double harmonics and left-hand pizzicati, creating the romantic image of the musician-hero and setting a new trend for romanticism.

One must remember that the modernisation of the violin was not complete in Paganini's time. It still had the original (Baroque) short, thin bass bar and thin soundpost, and the sound was not as powerful as today's instrument. It was sweet and mellow but without much projection, which was becoming increasingly necessary as tastes changed. Absolute concert pitch was still not established (at  $a' = 435$ ) by 1859 in France. Paganini's use of scordatura would have added brightness and penetration to the violin's sound, making it easier to compete with an orchestra in newer romantic textures, and satisfying the new taste for bigger volume and larger musical gestures.

In a key such as E-flat major ( e.g. Paganini's first violin concerto) the woodwinds would have sounded colourful, the orchestral strings less, and the retuned solo violin could be very brilliant and dominating. Perhaps in the enormous retuning of pieces like the "Moses

Variations” Paganini aimed to produce an effect that was not merely brilliant but “out of this world” - almost literally, diabolical.

## Chapter 6

### 20th-century scordatura, including jazz, folk music and Indian music

At the end of the twentieth century we seem to be at one of the most interesting and dynamic points in the development of human society. The arts, including music, are no exception. An example of this is the enormous and rapid development of musical language. For the past few decades traditional ways of composing and performing have proved unsuitable for the expression of the new ideas and goals of our time, with the result that many new forms of writing have appeared. This is also the case with music for violin, as is clearly illustrated by Patricia Strange in her thesis "New Resources for the Violin in Contemporary Literature" (1973).

However, among the many new resources and techniques Strange enumerates, scordatura is notable by its absence. Both from her study and from a scan of new music for violin, it would seem that scordatura is a neglected, almost forgotten theory and practice. There are few examples of it even in earlier twentieth century orchestral and chamber music, which I will return to later.

There has to some extent been a necessary rebirth of interest in scordatura among the early music specialists, the new performers of 'authentic' music. As well as playing with original instruments they use a range of earlier techniques and means of expression, including

scordatura, embellishment, improvisation and bowing techniques suited to the early mechanics of the bow, the bridge and the strings. Mainstream orchestral violinists do not, on the whole, understand these issues or even acknowledge their importance, to the extent that sometimes orchestral passages written in scordatura will be transposed and played in normal tuning (for example the famous scordatura passage in the second movement of Mahler's Fourth Symphony.) This situation arises today partly because violinists and composers are no longer one and the same person, as they normally were for example in the sixteenth to early nineteenth centuries. It is also attributable perhaps to the technological revolution: it is now possible to 'retune' by the flick of a switch, which does not encourage the research of more laborious methods.

Scordatura does appear in another sphere of twentieth-century music, namely jazz. From the beginning, the violin in jazz was treated as a solo instrument. Johnny St. Cyr, a pioneer jazz guitarist, speaks about some of the first dance ensembles in New Orleans before the First World War: "The violin was also the lead instrument with the cornet and would take over when the cornet player would 'take down' to save his lip" (St. Cyr 1967: 16). But competition with the sound of instruments such as trumpet and drums was tough, as well as competition with the noise of the dance halls in which jazz ensembles frequently played. Increasing the power of the sound through the increased tension on the strings was of course one of the reasons why scordatura was first introduced in classical music. To overcome this problem in jazz, some musicians began to use the modern equivalent, electronic amplification, for example Stuff Smith, one of the first great

jazz violinists (Morgenstern 1967: 19). Nowadays, violinists in jazz and dance bands have increased the range of electronic enhancements to include devices like time-delay, echo, reverberation, equalisation, and wa-wa pedal (Kernfield 1988).

Another interesting development in the twentieth century is the contemporary jazz use of the "violectra", an electronic instrument sounding an octave below normal violin pitch (and thus bearing a resemblance to "down tuning" in classical scordatura). Jean-Luc Ponty and Michael Urbaniack both used this instrument, and later on a five-stringed electric violin with an additional low C (Kernfield 2: 581). Urbaniack also played a six-stringed instrument tuned to F, c, g, d', a', e''. A special tenor violin was developed by the Dane, Svend Asmussen and Harry Lookofsky (Ibid.). This violin has a range between viola and cello, and is no relation of the sixteenth-century version of the instrument. These developments tend to pale into insignificance next to Indian violinist Lakshminarayana Shankar's ten-stringed violin with two necks (Ibid.).

Insofar as these contemporary developments of the violin affect the range, timbre and tuning system of the instrument, they are considered for the purposes of this dissertation as "scordatura", although they are fairly far removed from the classical western usages discussed in earlier chapters. They do, however, remind us of that period of history, in the early middle ages, when the violin was an "evolving" rather than an established instrument.

One of the most interesting “classical” uses of scordatura tuning in jazz, even by the standard of Ariosti and Paganini, is provided by Ornette Coleman in his remarkable piece “Fuss, Feast, Breakout, European Echoes, Alone and the Arrest” (Glaess 1991: 137). Because of the performance style and pitches used, this piece, the first half of which is scored for violin, bass and percussion, is impossible to transcribe (Glaess 1991). Although pitch is sometimes recognisable, both the playing style and the tuning of the open strings (f-sharp, c'-sharp, flat g', e") cause a deflection from standard pitch.

The distance between the second string (midway between g' and g'-flat) and third, is less than a tritone and between the second and first string is more than a major sixth. The result is that the music sounds as if it is barely connected with any musical tradition, especially a western one: “Auf allen seinen Instrumenten geht es ihm nicht um im Sinne der europaeisch gepraegsten Tradition korrekte Intonation, sondern um deren ‘human quality’” [my translation: “On all his instruments it has not to do with the spirit of the European tradition of correct intonation but with its ‘human quality’”] (Glaess, 137).

Coleman (also an alto sax player) was self-taught, and did not pay attention to any of the usual techniques of European violin playing. In a sense, then, it is questionable to call this scordatura, since not only is it different from other examples, it exists in total ignorance of them. Whatever else, it is certainly unique.

An interesting feature of the development of violin playing and scordatura in the twentieth century is the increasing mutual

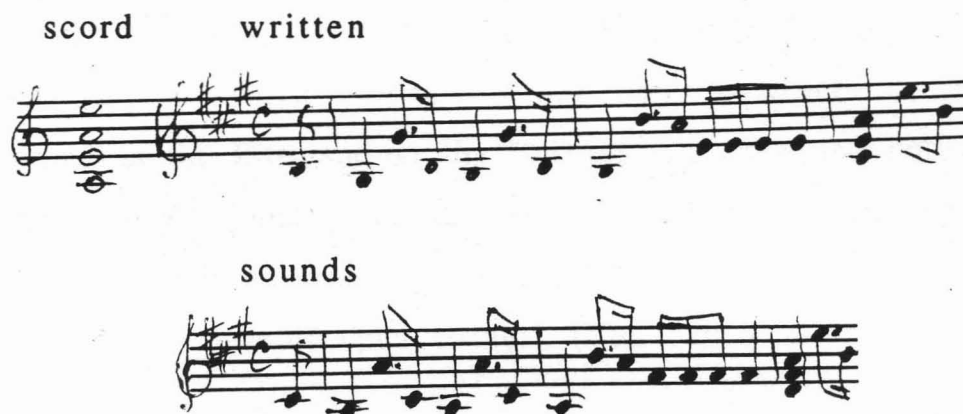
awareness of the art of folk musicians and the art of classical musicians. Because in many cases folk musicians practise an art which is very ancient, possibly reflecting earlier forms of 'art' music, they are included here as 'twentieth-century' examples. (Their instruments, tunings and ways of playing often reflect developments in the classical tradition, so the influence is mutual.)

A characteristic of many folk performances is the use of drones. Some instruments were specially designed to produce continuous drones, such as the hurdy-gurdy and bagpipes. The latter can be found in many different parts of Europe with very little change - for example Scotland, Bulgaria (gaida) and France (cornemuse). Drones crept into western classical music via dances like the Musette, and passages such as the following, from the Finale of Violin Concerto No. 4 in D Major by Mozart (bars 127-142):



As Bruno Nettl has observed: "Anglo-american fiddle players and the performers on the Norwegian Hardanger fiddle often strike open strings in addition to the melody tones, producing a kind of interrupted drone effect" (1965: 113). This is a very old feature. Jerome of Moravia (c1250) writes about the lira da braccio that had five strings, one of which is 'bourdon' and two others for melody (Coussemaker, quoted in Hugues 1960: 475). This is similar to the Scottish reel or strathspey, many of which are difficult to play since the drone and other strings are often not in normal tuning. For

example the strings are tuned to a, e', a", c"-sharp for the reel "Grigs Pipes", and to a, e', a', e" for "Black Fock" and "My ain kind dearie" (Farmer 1970: 284), and for "Kilrack's Reel" (Trainor 1972/3: 27):



A similar practice exists among the folk fiddlers of the Shetland Isles, where both Scottish and Irish influences are found. They use open strings for a drone both below and above the melody, and frequently use the "high bass" tuning a, d', a', e", which helps to keep the open strings more "in tune" harmonically with the melody (Cooke, 1986: 103). This particular retuning (in the main key of the reel) results in a reinforcement of the tonic note as well as a richer resonance of the instrument. There is almost certainly a link between this tradition and that of musicians in the southern Appalachians, who "often employ scordatura for traditional dance tunes and ballads. The most common tuning is a, e', a', e" " (Randel 1986: 735).

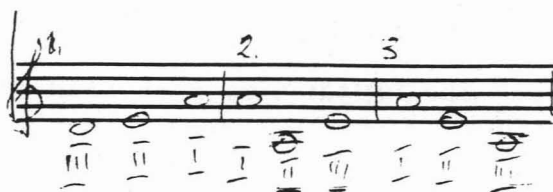
South Slavonic people (especially Bulgarians and Macedonians) also employ much the same style of violin playing and scordatura, using open strings where it is possible to produce drones. When the piece is slow the drone is usually not interrupted, but when the tempo is fast

it frequently is. Most folk ensembles in the late nineteenth and early twentieth centuries use the violin like a solo instrument. There were two kinds of tuning used - "a la franga" which is normal tuning, and "a la turka" which is g, d', a', d". For example, Haig Gudenian, a professional Armenian violinist of the early twentieth century, "travelled in the East and in the Balkans, studying and collecting traditional native tunes. To facilitate the use of Eastern modes, especially in double stopping, he employs various tunings, which allow of the frequent use of open strings" (Van der Straeten 1968: 428).

According to Al. Linin both tunings are still used today in Macedonia (1986: 61). He explains the lowering of the first string by a tone as an attempt to soften the violin timbre. Possibly there is also an eastern influence lying behind some of these tunings, especially where the tonic-dominant repetition occurs (as it does in the tamera for example).

I. Machak, in his study of folk instruments says that in gypsy and other folk ensembles the second violin (contra, contrash) is often without the e"-string, because it is not used (1987: 65). Both the Bulgarian scientist M. Todorov (1950) and the German musicologist Curt Sachs (quoted in Todorov 1950: 94) see a link between the folk instruments of the Balkans and the development of the violin, especially in acoustical design and placing of the resonance holes. So in some respects surviving folk instruments in these countries tell us something of how medieval instruments sounded and looked. An interesting example is the Bulgarian gadulka (or gusla, lira-Greece, lirica-Macedonia), which is tuned as follows:

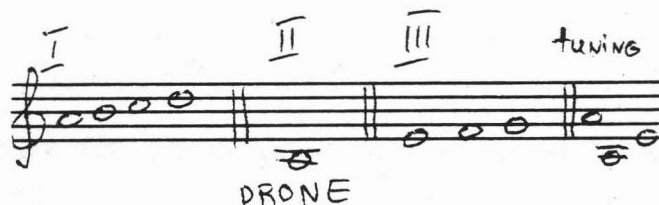
Three-stringed:



Four-stringed:



The practice of producing a permanent or interrupted drone is facilitated by these kinds of tunings, for example, in No. 2 above the first and third strings are for the melody and the second (lying a convenient striking distance for bowing on both the other strings) for the drone. With this tuning the folk musician can use these tones and their combinations:



Tuning No. 3 of the previous example is more contemporary and today we can find instruments tuned also in fifths. There are also five-stringed gadulkas, but they are more rare.

Although some of the theories about the rise of the violin support the idea of the oldest precursor being the north Indian (some authors write "oriental") rebab, the modern violin itself was not introduced into Indian classical music before the beginning of the nineteenth

century (*New Grove* 9: 131). Before this, the traditional bowed instrument was the sarangi. Its role was to accompany the solo voice, but later it was also used as a solo instrument.

The modern violin is used mainly in South Indian (Carnatic) music, where it is tuned in fifths and fourths according to the raga - usually the sa and pa (tonic and dominant). This kind of tuning is suitable for music where there is no change of key, although pieces using "modulation" do exist, as I discovered from a recent conversation with Dr. L. Subramaniam. He explained that there is, for example, a piece which he plays using nine different ragas, effectively changing the tonic each time, thus causing the equivalent of a western modulation.

For some ragas the performer tunes one or two of the strings to the third or fourth tone of the raga, especially if there are additional strings on the violin and the raga itself requires this (Subramaniam 1994). Dr. Subramaniam used a five-stringed violin in his 1994 Durban concert, tuned to e, b, e', b', e". As is usual in this style of music the tamera (or electronic drone) is tuned to the main notes of the raga. (In Indian classical music the drone provides the tonal and spiritual foundation for the whole performance.) The connection between the "tonality" of the raga and the tuning of the violin encourages the use of open strings.

Pitch in Indian music is not fixed (like a'=440) but varies to accommodate the needs of the singer (male or female) or other instrument(s) in the ensemble. This is something like the situation which prevailed in sixteenth- and seventeenth-century European

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classical music. The fingering technique in Indian music is mainly confined to the first two fingers in first position, although some outstanding musicians use all fingers and employ different positions. This allows for control in articulating microtones (sruti) and for rich ornamentation, which is essential to the idiom.

The violin is also used as a solo instrument and as an "orchestral" instrument in North Indian or Hindustani music, although it is usually associated with Carnatic music. Ravi Shankar, who like so many top Indian performers integrates both styles, sometimes plays on a ten-stringed violin tuned to the main notes of the raga, with of necessity many doublings of tones at different octaves.

It has been amply demonstrated by now that the word *scordatura*, as it originates from the word discord, is both inadequate and even inappropriate for styles of music as diverse as Carnatic, jazz, Biber, Paganini, Scottish reels and Bulgarian folk music. The inclusion of traditions outside the specific field of European art music illustrates both the flexibility of the concept *scordatura* and the variability of techniques used for extending the parameters of tuning and timbre in the violin family.

*Scordatura* in twentieth-century art music is limited in scope and confined mainly to attempts to add a "folksy" (if not freakish) quality to a generalised symphonic sound or to enhance a virtuoso solo piece. An example of the latter is Joseph Szigeti's transcription for violin and piano of the *Spielmannslied* by Michael Gnessin. The tuning is f-sharp, d', a', e". The lowering of the fourth string a semitone to f-

sharp enables the performer to play double octaves easier, rather than using difficult fingered octaves with extensions. An interesting feature of this piece is that it is written as sounds, so performers have to work out their fingerings, which is not the normal practice with scordatura.

A well-known instance of scordatura in the orchestral repertoire is the second movement (Scherzo) of the Symphony No. 4 in G Major by Gustav Mahler. (Mahler worked on this Symphony from 1899 to 1901 and revised it for the last time in 1910. The first performance was in Munich in 1901. The original score was first published in 1901 and a revised version appeared in 1906. For the purposes of this chapter, therefore, it is regarded as an early twentieth-century work.) The solo violin melody which begins in bar 6 is written for an instrument tuned a whole tone higher - a, e', b', f'-sharp - in "hand-gripp" notation. There is a note by the composer on the score directing the concert master to have two instruments, one tuned normally and one tuned to scordatura, since the passages alternate in this movement. Richard Strauss, in his Symphonic Poem *Ein Heldenleben*, directs the second violins to retune their g string to g flat, and later, after five bars rest, back to normal tuning. (The notation is as sounds, not "hand-gripp" notation.)

Kodaly uses scordatura in the Sonata for Unaccompanied Cello. Eugène Ysaÿe in his *Poème Elegique* for Violin and Orchestra retunes the g string to f at one point (Keldish 1981: 55). Other works are Stravinsky's *Firebird Suite* (first movement), Bartok's *Contrast* for violin, clarinet and piano (last movement), where the violin is

retuned to g-sharp, d', a', e"-flat so that tritones can be played easily, Albert Stoessel's *Flitting Bats*, where enharmonically the same tuning - a-flat, d', a', e"-flat) allows the use of parallel glissando tritones, and Schnittke's *A Paganini* and *Moz-Art*, a piece for two violins. In the latter work, the second violin must retune the g string to d flat while playing, and along the way, trill on the note e flat by turning the peg! (Op. cit. 56). Another example where the string is played as it is retuned is the *Rhapsodie Vardar* by Pantcho Vladiguerov (already mentioned), where the intention is to evoke the sound of the Bulgarian gadulka. Slonimsky, in the finale of his Violin Sonata, lowers the g string to f sharp, and in the finale of the Suite Exotique for two violins, two electric guitars, saxophone and percussion, the second violin g string is retuned to e (Ibid.).

There may be examples of scordatura in contemporary works, which I have been unable to locate. However, it seems possible to generalise that nowadays scordatura is unfortunately rarely used in contemporary music, despite the fascinating precedents set and the unexplored potential, particularly regarding new harmonic idioms, timbres and sound effects. One might mention the use of the "tasto" ("capotasto") - an adjustable bar across the fingerboard of fretted instruments such as the ukelele and guitar. This stops all strings and changes the whole tuning (like transposition scordatura), enabling the performer to use first position fingers in higher and more difficult keys. Perhaps this, and other effects borrowed from other instruments, will find its way into violin practice. Perhaps also, more young virtuosi will, as they train, study more carefully than has been

the case until now the techniques needed to play works by Biber, Ariosti, Bach and Paganini in their original fashion.

## Conclusion

During three centuries (the sixteenth, seventeenth and eighteenth) scordatura had a leading role in the aesthetics of composition and performance. At the very beginning it helped musicians to handle the problems which arose from the different pitches by using transposition scordatura. After this it flourished as an independent tool, enabling the expression of new sonorities and techniques.

In the transitional period when the violin was becoming established with its new, different sound from the viol, the scordatura was the bridge between both instruments and their sounds. With the help of scordatura the composers were able to develop (especially in Germany) the polyphonic style of violin playing, and without the works of Biber maybe Bach's solo sonatas and partitas could not be created.

After 1700 the development of violin playing, the establishing of the concerto, the presence of virtuosi, the new audience and venues - all demanded new sounds capable of competing with the larger orchestras, filling the new concert halls, impressing the public and responding to the new ideas of composers and performers. In this situation again the scordatura was in a position to help in such development. All these changes were gradual and it took centuries to establish a new idea or aesthetic concept.

Sometimes two conflicting ideas coexisted and it is impossible to say when exactly the new appeared and the old died. Scordatura was never intended to simplify the technical problems of amateurs. It was "a device for masters", as Falk wrote in his *Idea boni cantoris* (1688) (quoted in *New Grove* 19: 57).

Although in its early days this practice was a technical matter - an adjustment of tuning to suit circumstances - as it progressed the timbral possibilities caused by retuning took hold increasingly, and by the eighteenth century it was well on the way to becoming an aesthetic response rather than merely a mechanical one.

Even when it helped to overcome some fingering problems it opened new doors for the further artistic development of violin, becoming a strong factor in the preparation and creation of new styles. In some respects scordatura was like a laboratory for composers to hear the results of technical devices for which the violin in various stages of its development was not quite prepared, like consecutive tenths, octaves, thirds, multiple stops in difficult positions, new timbres and colours, and many other techniques now established in violin playing.

In the present time the possibilities for further creative use of scordatura remain largely unexplored, waiting perhaps for another Paganini to come along and unlock a few more of its amazing secrets.

Again the *scordatura* may enjoy a rise in popularity among composers, performers and listeners because in this age a violation of existing principles is allowed and even cherished.

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It is in the *scordatura* that we find an example, in music, of the 20th century artist's attempt to suppress the old and to adopt and exploit some new developments (Trainor 1972/73: 31).

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