

The Encoding of Faith:
Scordatura in Heinrich Biber's *Mystery Sonatas*



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ABSTRACT

The critical reception of scordatura since the time of Heinrich Ignaz Franz Biber (1644-1704) has led to the commonly accepted notion that it is suitable only for vacuous displays of instrumental virtuosity. Consequently, Biber's extraordinary use of the technique in the *Mystery Sonatas* – 15 works based on the Catholic rosary – has been largely overlooked in modern scholarship. This thesis will contend that scordatura is, in fact, fundamental to Biber's compositional language within the *Mystery Sonatas*, and that his method of deploying it reflects his Catholic, and specifically Jesuit, background.

Chapter 1 traces the history of scordatura, illustrating the tradition to which the *Mystery Sonatas* belong, its rise and fall from musical fashion, and subsequent critical reception. Chapter 2 establishes the contexts within which Biber's use of scordatura can be assessed, by attempting to define the characteristics of a Jesuit approach to music and the rosary. This is achieved through an examination of Jesuit religious art and the experiential nature of meditation advocated in St. Ignatius Loyola's *Spiritual Exercises*. Chapter 3 presents, for the first time, an investigation into the mechanical aspects of scordatura, the physical changes brought about on the violin by retuning the strings, and the variety of effects this has on the instrument's tone production. Having established that Biber's use of scordatura in the *Mystery Sonatas* provides him with a uniquely expressive musical idiom, chapter 4 considers how he employs the technique as a narrative device, assessing the way in which it conveys the pieces' content. The trend in modern Biber scholarship to impose literal interpretations on each of the sonatas will be reviewed; thereafter, it will be asserted that a more complex degree of emblematic, allegorical representation is in evidence in the fabric of the pieces, and that it is scordatura which facilitates its transmission.

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DECLARATION

The material presented herein is solely the work of the author. It has not been submitted for any other qualification, nor has it appeared in any publication.

CHAPTER 1

Biber's Scordatura in Context

Scordatura: A History

The art of scordatura is older than the violin itself; the retuning of one or more of an instrument's strings to non-standard pitches (scordatura literally means 'mis-tuning') would seem to have originated among Italian lutenists in the early sixteenth century, before the violin as we know it was developed, and has been a feature of violin technique since the early seventeenth century at the latest. Scordatura can be notated in two ways; the first is for the composer to write the notes that they wish to sound, as in a piece for a conventionally tuned instrument. In this case the performer must work out a new fingering for any notes on the strings that have been retuned, and so this method of notation quickly fell out of use. The second method, which became standard, is essentially to treat the violin as a transposing instrument and, having indicated the scordatura, to notate the music as if the violin were tuned conventionally (see figure 1.1 and example 1.1). This means that the notes which are sounded on the retuned strings do not actually correspond with those notated on the page; rather, the notation indicates a fingering, assuming that the performer will use low positions and open strings wherever possible.

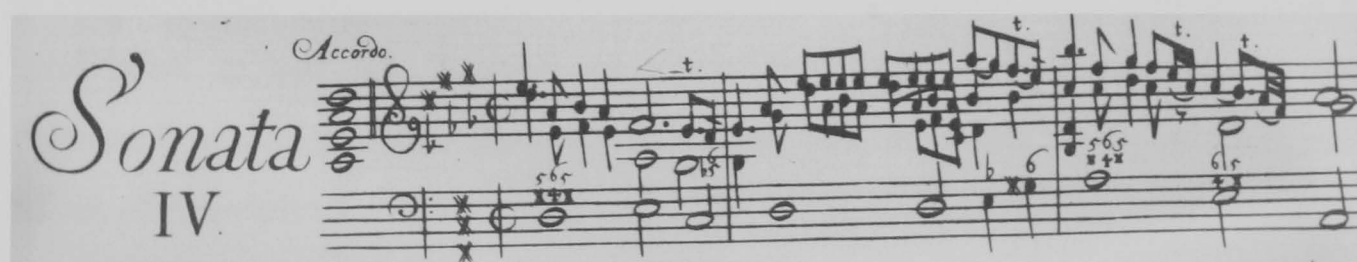


Figure 1.1: Scordatura notation in Biber's Sonata IV (1681). The retuning is indicated alongside the work's title information.

The image displays two systems of musical notation for the first six bars of Sonata IV (1681). The top system consists of two staves: the upper staff is labeled 'Violin in scordatura' and the lower staff is labeled 'Violin at sounding pitch'. Both staves are in treble clef with a key signature of two sharps (F# and C#) and a common time signature (C). The notation includes various rhythmic values, accidentals, and dynamic markings such as 't' (tutti) and 'f' (forte). The bottom system shows a more complex arrangement with multiple staves, likely representing a different instrument or a more detailed view of the violin's role, featuring similar notation and dynamic markings.

Example 1.1: Sonata IV (1681) bars 1-6, showing scordatura notation and sounding pitches.

The earliest known scordatura for the violin occurs in Biagio Marini's (c.1587-1663) Opus 8, published in Venice in 1626. Marini was one of the first great innovators in instrumental music and was a pivotal figure in the development of an idiomatic violin technique; indeed, David Boyden refers to him as 'the most important composer of violin music in the early seventeenth century' (Boyden, 1965: 108). Marini was among the first composers to write music specifically for the violin, as opposed to an unspecified soprano melody instrument, and his use of, for instance, multiple stops, echo effects, and passagework suited to the violin alone was truly groundbreaking.¹ Marini's use of scordatura in his Opus 8 must also be seen as an innovation in the development of violin technique in that he takes a feature previously associated with another instrument (the lute) and incorporates it into the idiom of the violin.²

Although Marini was an Italian (born in Brescia) and his Opus 8 was published in Venice, Eleanor Selfridge-Field has shown that, in all likelihood, the collection was actually written while Marini was abroad in Germany, where he

¹ Prior to the music of composers such as Marini instrumental music was made suitable to a variety of soprano instruments, such as the recorder and the cornetto, as well as the violin. It therefore tended to be restricted in terms of its range and to consist predominantly of conjunct intervallic movement. For a detailed discussion of Marini's *Sonata for Three Violins* with regard to the development of an idiomatic language specific to the violin as compared with the 'old style' of Giovanni Gabrieli's sonata for the same ensemble see David Boyden's *History of Violin Playing from its Origins to 1761* (1965), page 126.

² Although Marini's sonata is the earliest known violin piece in scordatura, it is not certain that it was the first example of the technique's use. However, it is the case that Marini's Opus 8 was hugely influential and that its use of scordatura would therefore have had a similar impact.

served at the Wittelsbach court in Neuberg from 1623-6 (Selfridge-Field, 1975: 127-8). This raises the possibility that Marini first encountered string players, including violinists and viol players, using scordatura while he was in Germany and that this served as the impetus for him to incorporate the technique into his music. Whether Marini's inspiration came from German string players or from the lutenists in his native Italy, it is certain that the seventeenth century saw a flowering of scordatura for violin in Germany, Austria and Bohemia, particularly from c.1670: composers such as Clamor Heinrich Abel, Georg Arnold, Johann Fischer, Johann Erasmus Kindermann, Johann Heinrich Schmelzer, Nicolaus Adam Strungk, Johann Paul von Westhoff, Augustinus Kertzing, Philipp Heinrich Erlebach, Johann Pachelbel, are all known to have made use of the technique, forming a tradition which culminated in Heinrich Biber's extraordinary retunings. There are also numerous anonymous German, Austrian, and Bohemian scordatura compositions for violin which date from around this time. For instance, the Klagenfurt manuscript contains a variety of unaccompanied suites and single movements for violin in scordatura, as do the Rost manuscript³ and the library at Kroměříž, where Biber himself worked before moving to Salzburg in 1670.

Following Biber's death in 1704 scordatura seems to have faded from fashion in Germanic Europe, with only isolated examples occurring. The most famous of these are probably Johann Sebastian Bach's (1685-1750) Cello Suite no. 5 (BWV 1011), in which the cellist is required to lower the top string from an *a* to a *g*, and Wolfgang Amadeus Mozart's (1756-1791) *Sinfonia Concertante* (K 364) for violin and viola, in which the viola solo part utilises a transposition scordatura in order match the brightness of the solo violin.⁴ Georg Philipp Telemann (1681-1767) also used the device in his *Concerto for Two Scordatura Violins and Continuo* (TWV 43:A2).

The last systematic deployment of the technique to come from the region would seem to be Johann Joseph Vilsmayr's (1663-1722) *Artificiosus Concentus pro*

³ For a full description of these two manuscripts see Pauline Nobes's thesis *Neglected sources of the solo violin repertory before ca. 1750: with special reference to unaccompanied performance, scordatura and other aspects of violin technique* (2000a).

⁴ This type of scordatura involves the retuning of all four strings to the same degree, thus retaining the interval of a fifth between each of the strings. In Mozart's *Sinfonia Concertante* all four viola strings are tuned up by a semitone: this means that the viola soloist plays the piece as if it were in D major whereas all the other performers play in E \flat major. Therefore, the open strings provide a great deal more sympathetic resonance on the viola than they do for the violin soloist, meaning that Mozart is able to achieve a balance between the instruments that would otherwise have proved difficult.

Camera, Distributus In Sex Partes, sue Partias à Violino Solo Con Basso belle imitante. This collection, published in Salzburg in 1715, consists of six suites for unaccompanied violin, four of which use scordatura. The court records from Salzburg reveal that Vilsmayr was, in fact, Biber's violin pupil (cited in Nobes, 2000a: 82), giving a rare insight into how knowledge of this particular facet of compositional technique was passed on.

It may be the case that it was also a German, Thomas Baltzar (c.1631-1663), who was responsible for popularising scordatura in England. Baltzar arrived in England from his native town of Lübeck in c.1655 and very soon became recognised as the best violinist in the country, a mantle he took from Davis Mell; in 1657 Anthony à Wood described how, when Mell performed, the opinion was that he had 'a prodigious hand on the violin' and that nobody 'could go beyond him'. However, upon hearing Baltzar in July 1658, it was reported that listeners 'had other thoughts of Mr Mell, who though he play'd farr sweeter than Baltsar [sic], yet Baltsar's hand was more quick and could run it insensibly to the end of the fingerboard' (cited in Holman, 1993: 268).

Although the violin had been known in England since 1540, it was only after Baltzar's arrival and the publication of his music that it gained widespread popularity amongst amateur musicians, and began to supplant the viol as the string instrument of choice (Holman, 1993: 268). Nevertheless, the viol's enduring influence could well have been responsible for composers such as Baltzar and Mell incorporating scordatura into their violin music. The violin's standard tuning in fifths is thought to have caused problems for English amateurs learning the instrument and, consequently, they frequently retuned it in ways with which they were more familiar; for instance, Anthony à Wood is known to have taught himself the violin by ear, 'tuning it in fourths like a viol' (Holman, 1993: 268). Similarly, the popularity of the *lyra viol*⁵ in England would seem to have had a direct influence on the use of scordatura for violin; Roger North stated that Baltzar 'often used a *lyra* manner of tuning, and hath some neat lute-fashioned lessons of that kind...behind him' (cited in Gilmour, 1980: iii). The speed with which scordatura subsequently became regarded as a standard feature of violin technique in England is demonstrated by its inclusion at the very beginning of John Playford's *The Division Violin* (1684), a collection of

⁵ This instrument, which was especially popular in England, had at least fifty known tunings between 1590 and 1685, none of which can be regarded as standard (Boyden, 1980: 58).

violin pieces based on ground basses by a number of composers including Baltzar and Mell (see figure 1.2).

Figure 1.2: ‘Mr Reading’s Ground’ from *The Division Violin*. The scordatura is indicated at the end, before the ground bass.

In contrast with Germany and England, and despite Marini’s hugely influential Opus 8, scordatura seems to have taken much longer to have become a standard feature of published Italian violin music. After Marini, only isolated examples such as Marco Uccellini’s (c.1603-1680) *Sonata Tromba sordina per sonare con un violino* (1649) and a small number of movements by Giovanni Maria Bononcini (c.1642-1678) are known from the seventeenth century. However, the music of Giuseppe Colombi (1635-1694) provides a tantalising glimpse of music not intended for publication; the manuscripts of the Este court in Modena contain an enormous amount of Colombi’s instrumental music, much of which is of great technical difficulty, and contains numerous examples of scordatura.⁶ It may therefore be the case that the surviving music from the period, most of which is published

⁶ For a detailed examination of Colombi’s violin writing see Gregory Richard Barnett’s *Bolognese Instrumental Music, 1660-1710*. See also Pauline Nobes’s *A Catalogue of Unaccompanied Solo Violin Repertory before ca. 1750: An annotated compilation* (2000b).

work, could be giving an inaccurate impression of the degree to which Italian composers were using scordatura. If this is the case, it is notable that scordatura seems to appear more frequently, and with a greater variety of retunings, in unpublished music. In contrast with the situation in England, where scordatura seems to have been used as a means of simplifying violin technique for amateur players, in Italy and Germanic Europe it was an art form which was reserved for 'masters' (Falck 1688 cited in Boyden, 1965: 246).⁷

During the eighteenth century, Italian composers did make more regular use of scordatura in their published music. In 1701 Carlo Ambrogio Lonati (c.1645-c.1710-15) published his *12 Sonatas for violin and basso continuo* in two volumes of six. The first volume consists of five sonatas for a conventionally tuned violin and a sixth for a five-stringed instrument in scordatura. The second volume presents a mirror image of this structure, with the first five sonatas in scordatura and a final *Ciaconne* in a conventional tuning. Here, then, is one of the first known Italian publications to make systematic use of scordatura, rather than featuring the technique as an isolated device in the manner of Marini and Uccellini.

Following Lonati it should perhaps come as no surprise that Antonio Vivaldi (1678-1741) made use of scordatura in several of his violin concertos; for instance, his Opus 9 collection, entitled *La Cetra* (1727), contains two pieces (numbers VI and XII) which employ the technique. Here, like Lonati, Vivaldi seems to have placed his scordatura works strategically within the set, this time as the final concerto in each of the two volumes.

After Vivaldi, scordatura endured in Italy throughout the eighteenth and early nineteenth centuries, with composers such as Pietro Nardini, Giuseppe Tartini, Antonio Lolli, Pietro Castrucci, Emanuele Barbella and Bartolomeo Campagnoli continuing a tradition which culminated with Nicolò Paganini (1782-1840). Carl Guhr reports that Paganini used a transposition scordatura, similar to that which we have seen in Mozart's *Sinfonia Concertante*, when performing the solo violin part in his Concerto no. 1 in E \flat (Guhr, 1829: 5-6). Paganini is also known to have tuned his

⁷ It is possible that this is the reason that Biber's *Mystery Sonatas* were never published; although they represent 'the most extensive and imaginative use of scordatura in the history of music' (Boyden, 1980: 58), it is the case that Biber's published scordatura music for solo violin, the *Sonata Violino Solo* (1681), does not employ the technique to the same extreme degree as the unpublished *Mystery Sonatas*, which were presumably intended for Biber himself to perform. With regard to Biber's use of scordatura in *Harmonia artificiosa-ariosa* (1696) see pages 12-13.

lowest string to pitches between *g* and *bb*, depending on the character of the composition he was playing (Guhr, 1829: 3).

As was the case in Italy, it was only in the first half of the eighteenth century that scordatura for violin became popular among a smaller number of French composers; it is known to have been used by Michel Corrette, Jean Lemaire, Tremais and Isidore Bertheaume. However, despite the relatively few occurrences of the technique in French music throughout the eighteenth century, it is the Frenchman Pierre Marie François de Sales Baillot (1771-1842), in his *L'Art du Violon* (1835), who provides us with the fullest description of scordatura and its use from this later period. Baillot first describes in detail the individual characters or voices of each of the violin's four strings when the instrument is tuned conventionally (Baillot, 1835: 244-53). He later produces a table of different scordaturas in which he shows how these characters are altered by the retunings (Baillot, 1835, 416-18). It is also noteworthy that Baillot includes his opinions of the relative advantages and disadvantages of the various scordaturas in this table; as we shall see, the tide of critical opinion had begun to turn against scordatura and, after Paganini, it faded from mainstream violin music in the nineteenth century with only isolated examples appearing.⁸

The *Mystery Sonatas* Manuscript: Context and Function

We have now seen how the tradition of scordatura for violin, to which Biber's *Mystery Sonatas* belong, developed and subsequently faded during the seventeenth and eighteenth centuries. However, when placed in the context of this scordatura culture, the *Mystery Sonatas* still stand out as the most comprehensive and extreme use of the technique in all of the violin repertory. The set is made up of 16 pieces, the first 15 of which are for violin and basso continuo. The sixteenth piece is a Passacaglia for unaccompanied violin. Of these 16 works only two, the first and last, are for a conventionally tuned instrument; the remaining 14 pieces are for violin in scordatura. Furthermore, no two of these scordaturas are the same, meaning that in

⁸ Despite this, scordatura has never become totally obsolete and since the nineteenth century has been used in, for example, Schumann's Piano Quartet Op. 47 (1842, cello part), Saint-Saëns's *Danse macabre* (1874, solo violin part), Strauss's *Ein Heldenleben* (1897-8, violin part) and *Don Quixote* (1897, viola part), Mahler's Symphony no. 4 (1900, solo violin part), Stravinsky's *Firebird Suite* (1910, violin) and *Rite of Spring* (1913, cello), Kodály's Sonata for Solo Cello (1915), Bax's Symphony no. 1 (1922, violin and viola), Berg's *Lyric Suite* (1925-6, cello), and Bartók's *Contrasts* (1938, violin).

the course of 16 pieces there are 15 different tunings (see figure 1.3). In this way the *Mystery Sonatas* differ from the works that we have seen by composers such as Lonati and Vilsmayr, whose most comprehensive uses of the technique involved the repetition of at least one scordatura during the set.

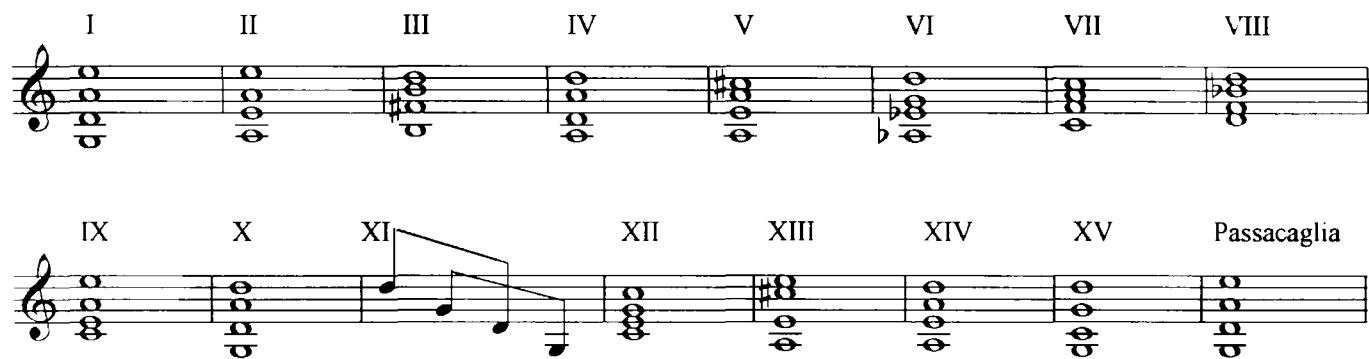


Figure 1.3: The tunings in each of the 15 *Mystery Sonatas* and Passacaglia.

The scope and variety of the scordaturas presented in the *Mystery Sonatas* are particularly notable when compared to other sources such as the Klagenfurt manuscript. As Nobes has demonstrated, this manuscript contains a collection of anonymous multi-movement suites and single movements for unaccompanied violin; of these, 16 pieces (eight suites and eight single movements) are in scordatura (Nobes, 1999: v-xiii). However, whereas the 16 *Mystery Sonatas* contain 14 different scordaturas (see figure 1.3, above), the 16 Klagenfurt pieces use only five retunings (see figure 1.4).

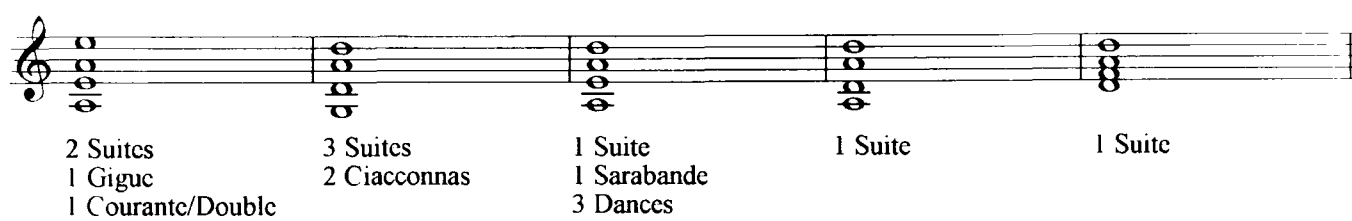


Figure 1.4: The Klagenfurt manuscript scordaturas.

Even within the context of Biber's own musical output, the *Mystery Sonatas'* use of scordatura is extraordinary; of his 22 known scordatura works, 14 are to be found in the *Mystery Sonatas*, six in *Harmonia artificiosa-ariosa* (1696) – a collection of seven partitas for two instruments (two violins, violin and viola, and

two violas d'amore) – and two in the *Sonatae Violino Solo* of 1681 (see figures 1.5 and 1.6).

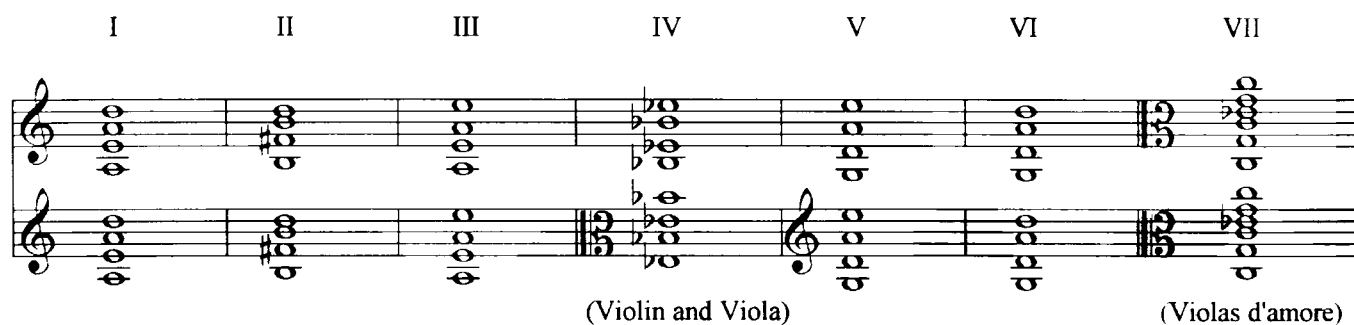


Figure 1.5: Tunings in *Harmonia artificiosa-ariosa*.



Figure 1.6: Scordaturas in *Sonatae Violino Solo*.

In the 1681 sonatas Biber uses scordatura in a manner akin to Marini in his Opus 8; the retunings are in no way as extravagant as some of those in the *Mystery Sonatas* and, although it serves to provide a new range of tone colours, scordatura is by no means the defining feature of the set, as four of the six works are for a conventionally tuned violin. In contrast, the use of scordatura in *Harmonia artificiosa-ariosa* is very much reminiscent of the retunings in the *Mystery Sonatas*; of the seven partitas, six employ the technique, and no scordatura is repeated throughout the set. Reinhard Goebel has suggested that Biber's motivation for writing and publishing these works was similar to J.S. Bach's with regard to his *Musical Offering* (1747):

The emergence of Italian rivals during the final years of his [Biber's] life may well have persuaded Biber to redefine his artistic position by means of a definitive work. Just as Bach produced his *Musical Offering* – a speculative, hopelessly old-fashioned work – in 1747, at a time when even the *galant* style of Telemann had largely been superseded, so Biber attempted in his *Harmonia artificiosa* to expound his own musical credo in the face not only of the Italian trio sonata, with its inconsequential thirds, but of the French style as represented by his rival, Georg Muffat. (Goebel, 2004: 7)

In other words, Goebel asserts that the use of scordatura in what is Biber's last published work deliberately harks back to the *Mystery Sonatas* of the 1670s, thus identifying scordatura as his instrumental music's ideal expressive feature.

There is only one extant manuscript source of the *Mystery Sonatas*, kept at the Bavarian State Library in Munich. This manuscript is undated and is missing its title page and, consequently, we cannot be sure of the work's original title.⁹ This, however, is not the reason for the name *Mystery Sonatas*; rather, the title refers to the copperplate engravings which preface each of the first 15 pieces. These engravings depict, in order, each of the 15 Mysteries of the Catholic rosary and, as such, serve in place of a title for each work (see figure 1.7). The unaccompanied Passacaglia is prefaced by an ink drawing of a child whose hand is being held by a Guardian Angel.



Figure 1.7: The opening of Sonata V (The Finding in the Temple), showing the copperplate engraving and scordatura.

The lack of a title page and a date for their composition means that we cannot be certain of the intended purpose of the *Mystery Sonatas*. Biber's dedication of the set to Count Maximilian Gandolph von Khuenberg, his patron in Salzburg from 1670, combined with stylistic evidence which suggests that they predate his *Sonatae Violino Solo* of 1681, means that a date during the 1670s is most likely (Chafe, 1987: 186). Furthermore, Erwin Luntz has demonstrated that as Biber was not well known at the time the *Mystery Sonatas* were compiled he includes his full name in the dedication, something he did not do in later publications. Luntz therefore concludes that the *Mystery Sonatas* date from no later than 1676 (cited in Chafe, 1987: 186). It has been suggested by Eugen Schmitz that the *Mystery Sonatas* would have been

⁹ It is unlikely that Biber would have referred to the pieces as 'sonatas' as this is the title he gives to many of their opening sections.

performed during public rosary celebrations in October, the rosary month, and that the unaccompanied Passacaglia, with its image of a child and a Guardian Angel, would have been played to celebrate the feast of the Guardian Angel on October 2nd (cited in Chafe, 1987: 186). In addition to this, John Holloway asserts that the *Mystery Sonatas* were compiled for the Salzburg Confraternity of the Rosary, and that the *Aula Academica*, where the confraternity met, was the venue for their performance (Holloway, 1994: 240). The walls of this building are lined with paintings of the 15 rosary Mysteries, similar to the copperplate engravings in the manuscript of the *Mystery Sonatas*, and as such make a convincing case for being the pieces' intended setting. However, Reinhard Goebel argues against the idea that the *Mystery Sonatas* were intended for public religious celebrations, suggesting instead that they were a more personal gift to his employer:

One is surprised, on examining the make-up of the 15 sonatas, to find that church sonatas – elsewhere, Biber's favourite genre – are wholly absent. Instead, these *Mystery Sonatas* are assembled from dance-movements and their busy *doubles* as well as chaconnes – a rather secular assortment. In all likelihood these works could not have been used as background music for public Rosary devotions...It is more probable that Biber played these works personally at private devotions of Archbishop Max Gandolph. (Goebel, 1991: 9)

Although scarce, there are precedents for including music as an accompaniment to rosary celebrations; two publications cited by James Clements, produced at Innsbruck in 1638 and 1640 respectively, include rosary hymns and songs alongside poems on each of the 15 rosary Mysteries (Clements 2002: 127). There is also a precedent for the linking of music to a series of religious images in the manner of the *Mystery Sonatas*; it has been demonstrated that the madrigals in Giovanni Giacomo Gastoldi's (c.1554-1609) collection *Sacre lodi a diversi santi* (1587) also correspond with specific paintings at the altars in the church of S. Barbara in Mantua,¹⁰ adding weight to Holloway's suggestion that the *Mystery Sonatas* were intended for the *Aula Academica* in Salzburg. It is, however, significant that all of these are vocal works; it would appear that Biber's use of an instrumental form for his rosary pieces is unique. Despite all this, the fact that the

¹⁰ See S. Patuzzi (1999): *Madrigali in Basilica -- Le 'Sacre lodi a diversi santi' (1587) di G.G. Gastoldi: un emblema controriformistico.*

Mystery Sonatas are missing a title page means that the purpose and dating of the set must, to some degree, remain matters for conjecture.

Scordatura: Effect or Affect? Critical Opinion and the Need for Reassessment

The c.330 years since Biber dedicated what we now know as the *Mystery Sonatas* to Archbishop Maximilian Gandolf, his patron in Salzburg, have not been kind to the art of scordatura. As we have seen, during the seventeenth century music for retuned string instruments was a common feature of composition across Europe, particularly in Germany, Austria and Bohemia. However, since the technique fell out of fashion after the early nineteenth century, critical appraisal has consigned it to a position where it is often regarded as a novelty device, an experimental backwater that was quickly abandoned. This view was expressed as early as 1752. when Johann Joachim Quantz (1697-1773) wrote:

The Germans [of the seventeenth century] played the violin harmonically rather than melodically. They wrote many pieces for which the violin had to be retuned, that is, the strings had to be tuned in seconds, thirds or fourths, instead of fifths, in accordance with the indications of the composer. This makes the chords easier, but causes not a little difficulty in the passage-work.

Their instrumental pieces consisted mainly of sonatas, partitas, intradas, marches, *Gassenhauern* [popular songs arranged for instruments], and many other often absurd characteristic pieces, which are no longer remembered. (Quantz, 1752: 337)

With this statement Quantz, who played Biber's music as a student, effectively set the tone for the future assessment of scordatura's worth; he makes two observations, first stating that scordatura's purpose is to facilitate the playing of chords, either making difficult multiple stops easier, or otherwise impossible ones playable. He attributes this to a particularly German style of composition for the violin, which he asserts is much more chordal in nature than both the Italian and French styles. Secondly, he rather dismissively implies that both this style and scordatura are only really appropriate for light music or 'absurd characteristic pieces', by which he means programme music such as Carlo Farina's *Capriccio stravagante* (1627), Johann Jakob Walther's *Hortulus chelicus* (1688) as well as Biber's own *Battalia* (1673) and *Sonata representativa* (c.1669), in which everyday sounds such as

birdsong or battles are literally represented on the instrument. These pieces enjoyed huge popularity during the seventeenth century and were often conspicuously virtuosic in nature. Both of Quantz's criticisms of scordatura, then, appear to be rooted in an assumption that it is limited in its usefulness only to vacuous displays of technical wizardry.

In his *L'Art du Violon* (1835), Baillot's assessment of scordatura is somewhat more even-handed; he gives illustrations of a variety of scordaturas and discusses their relative advantages and disadvantages (Baillot, 1835: 416-8). Among the advantages he cites are the ability to imitate other instruments which the use of scordatura facilitates (such as the viola d'amore), and the fact that it can make impossible passages 'easier and more piquant' (Baillot, 1835: 417). Chief among his criticisms of scordatura, however, is that it can be 'monotonous' and that it serves to reduce the compass of the instrument (Baillot, 1835: 416-8). It is also notable that Baillot includes his discussion of scordatura in a section of his treatise on 'general effects'. These effects are of the virtuosic type which can 'serve as a pleasing episode within a cadenza' (Baillot 1835: 378), but Baillot warns against their overuse within a composition saying that the violinist 'must choose between a transient vogue and lasting esteem' (Baillot, 1835: 378); in his opinion, if the performer wishes for enduring renown as an artist they must not rely too heavily on the kind of surface virtuosity represented by scordatura.

The view of scordatura as a piece of trickery has also filtered into modern-day violin scholarship: in his exhaustive *History of Violin Playing from its Origins to 1761* (1965), David Boyden's brief discussion of scordatura occurs in a chapter entitled 'National Schools: Virtuosity', echoing Quantz's assertions that scordatura was both specifically German and limited to virtuosic effect. He makes a direct comparison between the violin writing of Arcangelo Corelli (1653-1713) and the music of Biber and Walther, coming to the conclusion that 'compared to Corelli's music...that of Biber and Walther was less worthy of the effort required to perform it' (Boyden, 1965: 223). He reaches this conclusion due to what he perceives as the over-emphasis on technical virtuosity in Biber and Walther's writing, at the expense of the kind of expressive quality found in the music of Corelli. Similarly, in his article on scordatura in the *New Grove Dictionary of Music and Musicians* (1980), Boyden follows Quantz's lead in exploring the virtuosic capabilities of the technique: in his assessment of the eleventh *Mystery Sonata* (the Resurrection), in which Biber

requires the performer to cross over the middle two strings, as well as altering the pitches of the top two, Boyden mentions only that this facilitates the playing of passages in octaves and tenths (Boyden, 1980: 56). Indeed, he makes no reference to the symbolic nature of the tuning and the way that it forms two cross figures on the instrument. It is also the case that the recently revised article in the second edition of the *New Grove Dictionary* (2001) fails to correct this oversight. We will, in fact, return to this tuning during the course of this thesis, as its true symbolic nature has yet to be fully explored.

In Boyden's view, any musical advantages gained through the use of scordatura are more than outweighed by the following pronounced disadvantages:

The instrument's range is lessened.

A special notation and playing rules have to be observed.

It is difficult to keep the instrument in tune.

The instrument loses its characteristic sound.

If more than one scordatura is used in a performance, more than one violin must be used. (Boyden, 1981: 57)

Thus, for Boyden, scordatura is 'a cul-de-sac' (Boyden, 1965: 223) and 'often a nuisance' (Boyden, 1965: 226). This viewpoint is echoed by Fritz Zobeley in the preface to his edition of Johann Pachelbel's (1653-1706) *Trio Suites for 2 Violins and Basso Continuo*. In these pieces Pachelbel calls for two violins in scordatura; however, Zobeley's edition removes this feature with the following justifications:

This technique [scordatura] was at one time devised as a trick for obtaining extraordinary tonal effects or unusual double stops. This, however, was clearly not Pachelbel's intention: the tunings he prescribes are in every case adapted to the prevailing key, and without exception consist of the two fundamental notes of the tonic and dominant – presumably by way of acoustical experiment – so that a retranslation into the customary tuning by fifths does the music nothing but good. (Zobeley, 1966: 2)

Since Pachelbel did not make use of this scordatura as Biber did for instance, in order to make possible the use of chords otherwise unplayable, the retention of the re-tuning could also be omitted without question. (Zobeley, 1960: 1)

The received opinion of scordatura as a technical device fit only for displays of virtuosic trickery may well have informed the critical reception of Biber's instrumental music in general. Indeed, ever since the first recorded comments about Biber, his music has been discussed with regard to its virtuosity and technical difficulty. The great violin maker from Absam, Jacob Stainer (c.1617-1683), whose instruments Biber used, described him as 'the eminent virtuoso' (cited in Boyden, 1965: 195) and from that point on the die was cast.¹¹ Charles Burney, writing in 1789, stated:

Of all the violin players of the last [seventeenth] century, Biber seems to have been the best, and his solos are the most difficult and the most fanciful of any music I have seen of the same period. One of the pieces is written on three staves, as if a score for two violins and a bass, but meant to be played in double stops. Others are played in different tunings of fourths and fifths, as for a treble viol. (Burney, 1789: 580)

Here Burney draws particular attention to the technical difficulty of Biber's violin writing and to his use of scordatura, although he is not referring to the *Mystery Sonatas*, which he could not have seen since they were never published. The scordatura pieces of which he speaks are the *Sonatae Violino Solo* (1681), of which numbers IV and VI employ scordatura, and the set of six trios *Harmonia artificiosa-Arioso* (1696), all but one of which use the technique. In the same way that opinions such as Quantz's on the virtuosic nature of scordatura would appear to have affected its later critical reception, so James Clements has suggested, in his thesis *Aspects of the Ars Rhetorica in the Violin Music of Heinrich Biber* (2002), that these early comments about Biber's compositional style have coloured almost all later discussions of his music.¹²

¹¹ Stainer's comment was undoubtedly intended to indicate Biber's mastery of all aspects of violin playing. However, his use of the word virtuoso was later interpreted, particularly in the nineteenth and twentieth centuries, to have a narrower meaning and has led much subsequent scholarship to focus solely on the technical difficulty of Biber's works. It is true that much of Biber's writing for the violin does require a high level of technical ability, particularly his published *Sonatae Violino Solo* (1681). In the case of the *Mystery Sonatas*, it would seem that many commentators have assumed that scordatura is employed exclusively as an aspect of flamboyant performing technique; certainly, the extreme use of scordatura in the *Mystery Sonatas* does mean that the audience is frequently confounded by the sheer strangeness of the set. However, the pieces themselves contain significantly less technical display than the published 1681 sonatas. Therefore, in addition to acknowledging the ability of scordatura to amaze an audience, we shall see that Biber's use of the retunings in the *Mystery Sonatas* is integral to the works' compositional content.

¹² For a detailed overview of the reception history of Biber's music see the Introduction to James Clements's thesis.

That the opinion of Biber's music as a somewhat vacuous showcase for his technical capabilities as a performer has persisted may well be due in part to the lack of a continuing performing tradition prior to the concerts and pioneering recordings of artists such as Nikolaus Harnoncourt and Eduard Melkus (who, in 1967, became the first violinist to record the *Mystery Sonatas*). Consequently, while writers and critics after the time of Quantz have always been aware of the existence of Biber's music, they will not have heard it played and have therefore been content to repeat the opinions of earlier writers with regard to its content; Burney himself reports that he has seen Biber's sonatas and trios, but not heard them. Thus, Biber's scordatura works were rarely, if ever, performed on 'modern' violins, on which they are completely impractical:

[In scordatura] a modern steel *e* string sounds at best like a pair of braces when tuned down to a *d*, while a modern *g* string would cause the instrument to shatter if tuned up to *a*, *b* flat or *b*. (Goebel, 2004: 6)

However, the success of the early music movement in the second half of the twentieth century, and the rediscovery of many of the early violin's technical and expressive characteristics (for instance, through the use of plain gut strings), has led to a renaissance in the popularity of Biber's music, as it has once more become performable. As a result, the affective nature of his instrumental writing is now much more readily apparent and has led writers such as Eric Chafe (in *The Church Music of Heinrich Biber*) to acknowledge scordatura as being capable of more than it had previously been credited with. No longer is the technique viewed by all as existing purely for the solving of technical difficulties; the ability to hear the music performed has meant that scordatura's creation of entirely new sonorities on the violin has finally been noted as one of the features which must have made the device so popular in the seventeenth century.

So far, however, any discussion of scordatura in this new sympathetic light has tended to be somewhat simplistic – for instance, in her thesis *Neglected Sources of the Solo Violin Repertory before ca. 1750*, Pauline Nobes is content to assert that 'the purpose of scordatura is to enlarge the range of sonorities available on string instruments, introducing and exploiting diverse tonal, harmonic and display effects' (Nobes, 2000a: 23) – and, in the case of the *Mystery Sonatas*, attention has been almost solely diverted to the extraordinary tuning of Sonata XI (the Resurrection)

with its crossing of the middle two strings.¹³ Furthermore, in comments such as Nobes's, there is more than a lingering feeling that 'display' is still regarded as at least as important a factor as expressive content in the *Mystery Sonatas*' scordatura. For instance, in the CD liner notes which accompany his recording, Walter Reiter states the purposes of scordatura to be 'to achieve technical feats impossible with normal tuning, and to obtain different sonorities' (Reiter, 2001: 7) and, as we have already seen, the most recently revised article on scordatura in the *New Grove Dictionary* is conspicuous for its lack of discussion of the more significant aspects of Biber's scordatura. Similarly, in *Aspects of the Ars Rhetorica in the Violin Music of Heinrich Biber*, which is by far the most searching assessment of Biber's instrumental oeuvre yet undertaken in the English language, James Clements, despite arguing persuasively against such an approach to the music in general, describes the *Mystery Sonatas*' scordaturas as being 'showy or virtuosic' in addition to creating 'the requisite phantasia or representation of each work' (Clements, 2002: 131-2). However, despite the simplistic tone of much recent discussion of scordatura as an expressive device, it is surely significant that there has been a move away from viewing the technique as purely for show. It is, then, the aim of this thesis to demonstrate that, in the *Mystery Sonatas*, the primary purpose of Biber's use of scordatura is not display or virtuosic effect. Rather, it will be asserted that scordatura is intrinsically linked to the musical content of the works, a purely expressive, affective device, comprehension of which is essential to a consequent understanding of the sonatas.

Further to assessing Biber's use of scordatura in the *Mystery Sonatas*, this thesis will also aim to establish the contexts in which it can be fully understood. James Clements has suggested that Biber is more than likely to have received his education at the Jesuit college at Opava (German: Troppau) in modern day Poland. Although this is impossible to prove conclusively, Clements summarises a wealth of circumstantial evidence indicting that it was the case. The record of Biber's baptism in Wartenberg documents his name as 'Hennericus filius e[t] Mariæ Piebers' (cited in Clements, 2002: 33). Here, Biber's two middle names, Ignaz Franz, by which he referred to himself from at least 1676, are conspicuous by their absence. The two names are, of course, heavily associated with St. Ignatius Loyola, the founder of the

¹³ See, for instance, John Holloway's article: 'Biber: A man of Mysteries', in *Strad* magazine, 1994.

Jesuit order, and Francis Xavier, one of its original members. Furthermore, Biber's lifelong contact, from at least 1663, with a circle of musicians, including Pavel Vejvanovský and Johannes Rittler, who were trained together at the Jesuit college in Opava, strongly suggests that he also received his education there (Sehnal cited in Clements, 2002: 33). Clements also cites the fact that both of Biber's most prominent employers, Prince-Bishop Karl Liechtenstein-Castelcorno at Kroměříž and Count Maximilian Gandolph von Khuenberg in Salzburg, were educated by the Jesuits in Ingolstadt and at the German College in Rome respectively (Clements, 2002: 34). In Rome, Gandolph would more than likely have come in to contact with the college's most famous resident, Athanasius Kircher (1601-1680), who Clements boldly claims was 'the most influential music theorist (particularly musical-rhetorical theory) of the baroque' (Clements, 2002: 34). Whether or not this is true, Kircher's monumental *Musurgia universalis* (Rome 1650), which is not strictly a musical treatise but which instead covers virtually every aspect of the known world, was certainly extremely widely disseminated, and it is apparent that Biber himself was familiar with its contents; indeed, he used direct quotations of Kircher's notated birdsongs in the *Sonata representativa*. Clements's final piece of evidence that Biber was educated by, or at least very much associated with, the Jesuits comes from his analysis of the written dedications which preface each volume of his instrumental music. These dedications are crammed with precisely the kind of linguistic rhetorical devices, in highly formalised Latin, that were the norm at Jesuit colleges of the time.¹⁴ Clements then uses the context provided by the presence of these rhetorical devices to perform a similar rhetorical analysis of the figures in Biber's instrumental music itself.

The placing of Biber in a Jesuit context is perhaps the most significant breakthrough in recent scholarship on the composer. Within such a context it is the contention of this thesis that, contrary to received opinion, it is impossible to regard Biber's use of scordatura, in the *Mystery Sonatas* specifically, as mere virtuosic trickery. Rather, the aim is to show how scordatura, the sonatas' most notable compositional feature, is intrinsically linked to their content, and that it is, in fact, the key to unlocking the *Mystery Sonatas*' 'message'.

Chapter 2, then, will assess whether it is possible to define a Jesuit approach to music and the rosary, and establish the contexts and non-anachronistic parameters

¹⁴ For these analyses see Clements, 2002: 64-115.

within which Biber's affective scordaturas operate in the *Mystery Sonatas*. Chapters 3 and 4 will examine the *Mystery Sonatas* themselves: chapter 3 will investigate how the scordaturas affect the mechanical functions of the instrument and how, in turn, the relationship between Biber and his Stainer violin may have informed his revolutionary use of scordatura. Chapter 4 will assess how Biber, in the *Mystery Sonatas*, employs scordatura as a narrative device, looking at the way in which scordatura facilitates the transmission of individual affects within a given piece (on literal and non-literal, symbolic levels). Next, chapter 4 will approach scordatura in a way that has not previously been considered, through an examination of the roles of musical and physical gesture. By altering the pitches of the strings Biber changes the fundamental relationship between the instrument and the bow; with this in mind, it will be argued that much of the *Mystery Sonatas*' meaningful, affective content is contained within, and transmitted to a knowing audience by, the emblematic nature of the resulting physical gestures. Lastly, chapter 4 will examine the use of scordatura as an organisational, structuring device, showing how the cycle of retunings reflects the symbolic use of the technique previously noted at a local level.

CHAPTER 2

The Jesuit Context

If we are to read Biber's use of scordatura in the *Mystery Sonatas* as symptomatic of a Jesuit approach to both his subject – the rosary – and musical composition in general, it is first necessary to examine how a Jesuit education may have affected his outlook.

Founded by St. Ignatius Loyola, along with a small number of loyal companions, the Society of Jesus (to give the Jesuits their official title) was recognised as a religious order by a papal bull in 1540, and quickly became one of the most powerful of all catholic orders, whose activities were central to the Counter Reformation. The Jesuits' stated mission was to promote 'the progress of souls in Christian life and doctrine and... the propagation of the Faith' (cited in Ditchfield, 2007: 54), and the way in which this was achieved was through the Jesuits' own education system. The first Jesuit school was established in 1548 by Jerónimo Nadal and Peter Caiusius, and by 1580 there were 150 similar establishments. By 1615 this had expanded to 370 schools throughout Europe. The official curriculum of Jesuit education, the *Ratio Atque Institutio Studiorum Societatis Iesu*, was first published in 1599 and became the "magna carta" of European high school education for centuries' (Ditchfield, 2007: 55). There was a similarly rapid rise in the number who joined the Jesuits; in the year of Loyola's death (1556) the order numbered 1000, but by 1615 there were 13,000 (Ditchfield, 2007: 54-5).

The principles of Jesuit thinking are laid down in Loyola's *Spiritual Exercises*, a practical manual of guided meditative exercises to be carried out by a supervised exercitant, the purpose of which is 'to order oneself toward God' (Loyola, 1548: 51). This is achieved through four groups of exercises, divided by Loyola into 'Weeks' and, as such, provide a systematic and structured program of spiritual development that could be tailored to the needs of the individual.¹⁵

The First Week is made up of 'exercises characteristic of the purgative way, the purification of the soul to advance toward God' (Loyola, 1548: 51). To achieve

¹⁵ The term 'Week' as used here does not indicate a specific period of time. Rather, the exercitant continues with each group of exercises until it is deemed that they have mastered it sufficiently before moving on to the next Week.

this, Ignatius dictates that the exercitant devotes their mind to ‘the consideration and contemplation of sins’ (Loyola, 1548: 122) in order that they are subsequently able to make an informed choice between right and wrong. Included in this is the Fifth Exercise, a contemplation of hell which illustrates vividly the most vital aspect of Jesuit meditative technique, and is therefore worth quoting in full:

The First Prelude, the composition of place. Here it will be to see in imagination the length, breadth, and depth of hell.

The Second Prelude, to ask for what I desire. Here it will be to ask for an interior sense of the pain suffered by the damned, so that if through my faults I should forget the love of the Eternal Lord, at least the fear of those pains will serve to keep me from falling into sin.

The First Point will be to see with the eyes of the imagination the huge fire and, so to speak, the souls within the bodies full of fire.

The Second Point. In my imagination I will hear the wailing, the shrieking, the cries, and the blasphemies against our Lord and all his saints.

The Third Point. By my sense of smell I will perceive the smoke, the sulphur, the filth, and the rotting things.

The Fourth Point. By my sense of taste I will experience the bitter flavours of hell: tears, sadness, and the worm of conscience.

The Fifth Point. By my sense of touch, I will feel how the flames touch the souls and burn them. (Loyola, 1548: 141)

What Loyola aims to achieve in this dramatic passage is to have the exercitant not merely bring to mind an image of hell, but rather, through a systematic application of each of the five senses in turn, to physically experience the horrors and agonies which are the results of sin. The experiential use of the imagination in this way is a distinctive feature of the Jesuit meditative method:

He who goes through Loyola’s *Spiritual Exercises* has to experience hell and heaven with all his senses, to know burning pain and blessed rapture, so that the distinction between good and evil is for ever indelibly imprinted in his soul. (Fülöp-Miller, 1957: 7)

The remarkable and theatrical physicality of this meditative approach may well have been arrived at through the influence of certain kinds of religious art in Loyola’s native Spain. One startling example of this is the *El Santísimo Cristo*, a life-

sized crucifix, believed to date from the fourteenth century, which stands in its own chapel in the cathedral at Burgos in northern Spain. As Théophile Gautier, the French poet, observed when travelling through Spain in 1840:

This is no stone or painted wood; it is a human skin (or so they say), stuffed with the greatest care and art. The hair is real, the eyes have lashes, the crown of thorns is a real brier; not a detail is forgotten. There could be no more lugubrious or disturbing spectacle than this tall, spectral figure of the Crucified One, with its deceptive suggestion of life, yet deathly in its immobility; the skin, dark-hued and discoloured, is streaked with long trickles of blood, so skilfully imitated that one might imagine they were really flowing. No great effort of imagination is required to believe in the legend which relates that this miraculous crucifix bleeds every Friday. (Gautier, 1845: 44-5)

There can be no doubt that this macabre crucifix would have had a startling effect upon those who saw it. The bleeding of which Gautier speaks was achieved by mechanical means; a small sac was located in the figure's chest area which, when filled with liquid, caused it to appear to bleed from its wounds. Here, then, a person viewing the *El Santísimo Cristo* is not merely viewing an image of the crucifixion but, through the use of artifice, is led to believe that they are actually attending one. To the non-Spanish viewer such as Gautier this hyper-realism in church art was somewhat distasteful:

A craving for truthfulness, however repellent, is a characteristic feature of Spanish art; the ideal and conventional form no part of the genius of this race, which is totally devoid of aesthetic sense; sculpture is not enough for them; they must have coloured statues, painted Madonnas dressed in real clothes; material illusion can never be carried far enough for their taste, and this unbridled love of realism often makes them overstep the bounds which separate statuary from Curtius' waxworks. (Gautier, 1845: 44)

The similarity of approach between art such as the *El Santísimo Cristo* and Ignatius Loyola's prescribed and experiential meditative technique is, then, striking. Indeed, in the same way that Gautier points out that in the statue's representation of the crucifixion 'not a detail is forgotten', so Loyola has his exercitant perform a detailed analysis of every pictorial scene they are to meditate upon. For instance, in

contemplating the Nativity, the exercitant must first evoke in his mind a similarly detailed impression of the place in which the events are to take place:

Here it will be to see in imagination the road from Nazareth to Bethlehem. Consider its length and breadth, whether it is level or winds through valleys and hills. Similarly, look at the place or cave of the Nativity: How big is it, or small? How low or high? And how is it furnished? (Loyola, 1548: 150)

Also, the way in which Loyola's contemplations, and art such as the *El Santisimo Cristo* are experienced, is notably similar; the sensual aspect of Spanish art and statuary noted by Gautier, with its painted figures, real clothes and theatrical machinery, is very much akin to Loyola's continual insistence throughout the *Spiritual Exercises* that the exercitant must 'use the imagination and... apply the five senses' (Loyola, 1548: 151) in turn to the meditation in order to experience it fully.

Jesuits and Art

As we have seen, following official recognition of the Society of Jesus in 1540, the Jesuits embarked upon their mission to facilitate 'the progress of souls in Christian life and doctrine and... the propagation of the Faith' (cited in Ditchfield, 2007: 54). A key part of this mission at the end of the sixteenth and beginning of the seventeenth centuries took place in German-speaking lands, which the Catholic Church feared would soon be entirely lost to Protestantism. Jerónimo Nadal himself wrote from Vienna to Ignatius Loyola in 1555 that 'there is a very grave danger that if the remnant of Catholics are not helped, in two years there will be not one in Germany. Everybody says this, even the Catholic leaders' (cited in Smith, 1999: 572).

The seriousness with which this threat to 'the propagation of the Faith' was taken is further evidenced by the extraordinary program of church building that the Jesuits undertook in the German-speaking region: between 1580 and 1650 they built 24 new churches and renovated at least nine existing ones, as well as building or restoring many other chapels (Smith, 1999: 572). As Jeffrey Chipps Smith has shown, these figures are particularly astonishing when set against the fact that, in the preceding 50 years (1530-1580), not a single 'significant new church was initiated by any confessional group, Catholic or Protestant' (Smith, 1999: 573) in the region. In his essay 'The Art of Salvation in Bavaria', Smith has shown how several of these

new churches conformed to the Jesuits' 'pedagogical campaign to enlighten through Christian knowledge' (Smith, 1999: 572). In other words, Jesuit churches such as St. Michael's in Munich were constructed with a specific symbolic scheme in mind; the building, in conjunction with the artwork it contained, served to reinforce the Catholic message, and so enabled 'the propagation of the Faith'. This is very much in contrast with many older church buildings, the interior decorations and layouts of which were often arrived at haphazardly over time, according to the whims and artistic tastes of various patrons.

According to Smith, St. Michael's in Munich and its artwork presents:

[A] progressive sequencing of art, a layering of faith that builds upon itself. Its conceptual framework is based upon Ignatius's *Spiritual Exercises* as the worshipper is guided through a process of self-examination, illumination, and, ideally, union with God. (Smith, 199: 576)

This sequence begins outside the entrance to the church with Hubert Gerhard's giant bronze, *The Archangel Michael Vanquishing Lucifer* (cast in 1588). Here St. Michael stands guard over the church, creating a distinction between the outside world, which is subject to Lucifer's temptations, and the sanctuary of the church, which, in contrast, offers redemption to the faithful. The statue's form also serves to emphasise the ever present threat from Lucifer; having been pinned to the ground by the archangel, Lucifer writhes in pain and seems to 'project out beyond the confines of [the statue's]... niche' (Smith, 1999: 568). In this way 'we recall that Lucifer is momentarily subdued yet his power in our world is always potent' (Smith, 1999: 568). The similarity between the way in which this bronze serves to blur the boundary between the worlds of art and reality, making the battle between good and evil that it represents spill over into the viewer's experience of the real world, and the theatrical way that the *El Santísimo Cristo* seemingly creates an actual crucifixion, is striking, and it will be the contention of this thesis that such a sensual, experiential approach to religious art, a key feature of the Jesuits' concept of worship, lies behind Biber's extraordinary use of scordatura in the *Mystery Sonatas*.

By representing the eternal battle between good and evil at the entrance of the church, *The Archangel Michael Vanquishing Lucifer* also creates, in physical form, Loyola's great 'election' from the first part of the *Spiritual Exercises*, whereby the exercitant must choose between the paths of right and wrong before progressing to

the first of the four Weeks. If the worshipper chooses the path of good they will enter the church and continue to work their way through the building's artistic representation of the *Spiritual Exercises*.

The subjects covered in Ignatius's four Weeks are represented by the artistic contents of three pairs of chapels that the worshipper encounters in sequence as they move through the church. The first pair of chapels is devoted to and contains images of Sts. Mary Magdalene and Ursula respectively, both of whom provide 'models or mirrors of conduct for the worshipper' (Smith, 1999: 577), Mary Magdalene through her repentance of an earlier life of sin and St. Ursula through her acceptance of martyrdom rather than renouncing her faith. Smith has shown that 'contemplation of these two saints' lives... relates to the process of self-examination that the individual undertakes in the First Week of the *Spiritual Exercises*' (Smith, 1999: 577), meditating upon sin and its consequences and the benefits of a clear conscience to reinforce the 'election' to take the path of good.

Moving further through the church, the next pair of chapels is devoted to Sts. Andrew and Sebastian, both of whom were martyred. Smith contends that these two chapels correspond with the 'Call of the Temporal King' which opens the Second Week of the *Spiritual Exercises*:

The Second Prelude is to ask for the grace which I desire. Here it will be to ask grace from our Lord that I may not be deaf to his call, but ready and diligent to accomplish his most holy will. (Loyola, 1548: 146)

The second pair of chapel's devotion to the martyrs Sts. Andrew and Sebastian makes clear the message that one should be prepared to follow Christ's path, no matter how painful the consequences. This message is further reinforced by 18 'overlife-sized terracotta angels' (Smith, 1999: 579) which line the nave of the church, each of which is seen to hold one of the Passion symbols; these simultaneously represent the benefits of contemplating the different episodes of Christ's sacrifice and that one must be prepared to follow Christ, even to death (Smith, 1999: 579).

Next, the third pair of chapels contains the paintings *The Annunciation* and *Christ Giving the Keys of the Church to Sts. Peter and Paul*. These represent both 'the inception of Christianity and the institution of both the Catholic church and the apostolic tradition' (Smith, 1999: 579) and, as such, symbolise the end of the

Spiritual Exercises, where the exercitant is instructed to live with the church and to implement his/her 'personal way of following Christ' (Smith, 1999: 579).

In effect, then, by moving through the nave of St. Michael's church the worshippers are progressing through a physical representation of Ignatius Loyola's *Spiritual Exercises*. Upon reaching the choir area, proceeding through a triumphal arch, they are then greeted by a symbolic representation of the reward for living a good earthly life; indeed, the choir offers 'a hint of Paradise' through an artistic evocation of 'the heavenly Jerusalem' (Smith, 1999: 579-80). Michael the Archangel is again shown vanquishing Lucifer, but is now surrounded by 'twenty-four terracotta statues of apostles, martyrs, prophets and founders of religious orders' along with Andreas Weinhard's sculpture of Christ which 'stands majestically as the *salvator mundi*' (Smith, 1999: 581).

Thus, St. Michael's church functions in a way that epitomises the Jesuits' approach to art, in that it is essentially a physical realisation of the concepts put forward in Ignatius Loyola's *Spiritual Exercises*; indeed, symbolically, it is the *Spiritual Exercises* in building form. Again, like the *El Santisimo Cristo* at Burgos, the sensory nature of the way in which the artistic scheme at St. Michael's functions has the effect of bringing the visitor into the symbolic world of the artwork so that its message, in this case the benefits of undergoing the spiritual journey towards Paradise prescribed by Loyola in the *Spiritual Exercises*, can be actually experienced. In this way the visitor to St. Michael's takes part in the *Spiritual Exercises* by moving through the church; from making the 'election' to enter the building one is guided by the artistic programme through each Week in turn 'towards Christ and Salvation' (Smith, 1999: 581).

Anna C. Knaap has shown how, in a way very much like St. Michael's Munich, the artwork in the Jesuit church in Antwerp (begun in 1615, consecrated in 1621) was also 'conceived as a unified program that guided the viewer through sacred space' (Knaap, 2006: 157). The difference here, though, is that the art was the work of one man, Peter Paul Rubens. Rubens's achievement at Antwerp was the devising of 'an intricate network of visual, rhetorical, and thematic relationships that interacted across the actual space of the church' (Knaap, 2006: 157). He provided a series of 18 biblical narratives for the church's ceilings, nine of which depicted events from Christ's earthly life alternating with Old Testament prototypes, while the other nine showed his heavenly life along with Old Testament types (Knaap, 2006:

161).¹⁶ Knaap has shown how these functioned as 'instruments of meditative prayer' (Knaap, 2006: 161), in both the way that the subjects chosen echo Jesuit devotional literature and the way in which the cycle was spatially organised:

Like the sequential arrangement of Ignatius's *Spiritual Exercises*, which invited the reader to dwell on the places, figures and actions of Christ's life, Rubens's typological paintings were structured as a progressive exposition of related images, encouraging the viewer to draw mystical connections between various details in the life of Christ and the Old Testament narrative that prefigured them. (Knaap, 2006: 161-2)

In this way Rubens connected the raising of Moses's arms in *Moses in Prayer* (which had long symbolised a prefiguring of the Cross and a prophecy of the raising of the host by the priest in Mass) with the Last Supper, where Christ uses the same gesture in offering the bread to Peter, and again when Melchisedek offers bread to Abraham in *Abraham and Melchisedek*, both of which the viewer sees as they progress down the church's gallery.¹⁷

At Antwerp then, very much like St. Michael's in Munich, the spatial organisation and interconnectedness of Rubens's artwork takes the worshipper through a sequential narrative programme and, again, in order to interpret the meaning of this programme, the worshipper is required to physically move through the building, effectively taking part in the narrative. The physical connection between the ceiling art and those viewing it was vividly demonstrated at Antwerp, as was the case in St. Michael's, by a depiction of Lucifer. In *St. Gregory of Nazianus*, a devilish figure was shown being expelled from heaven by St. Gregory. Rubens's incredibly skilful use of perspective in this picture gave the impression that the devil was about to fall from the ceiling on top of the viewer.

The ceiling thus visually reinforced the message that a believer should follow the actions of the saints and resist the temptations of the devil in order to successfully quit the terrestrial world of demons for the glorious realm of heaven. (Knaap, 2006: 168)

¹⁶ These were all destroyed by fire in 1718. Consequently, scholars have since had to base their analyses of the paintings and their layout on Rubens's preparatory oil sketches along with later copies made by other artists.

¹⁷ For a detailed analysis of the inter-relationships between Rubens's ceiling paintings see Anna C. Knaap's 'Rubens's Program for the Jesuit church in Antwerp' in *The Jesuits II: Cultures, Sciences and the Arts, 1540-1773*.

Like *The Archangel Michael Vanquishing Lucifer* in Munich, then, it is yet again the theatricality of the artwork that, by making the subject appear to spill out into the real world, creates a physical experience of the events depicted for the viewer. It is this regular feature of Jesuit religious art which, this thesis will contend, is the reason for Biber's use of scordatura in the *Mystery Sonatas*.

Jesuits and the Rosary

The rosary in its final form is a collection of prayers, consisting of 150 *Aves* and 15 *Pater Nosters*. Whilst reciting these prayers the worshipper is also required to meditate upon 15 different episodes in the lives of Christ and Mary, saying one *Pater Noster* and ten *Aves* to each. These, in turn, are divided into three sets of five Mysteries – Joyful, Sorrowful, and Glorious – as shown in figure 2.1:

The Joyful Mysteries:	The Annunciation
	The Visitation
	The Nativity
	The Presentation in the Temple
	The Finding in the Temple
The Sorrowful Mysteries:	The Agony in the Garden
	The Scourging
	The Crowning with Thorns
	The Carrying of the Cross
	The Crucifixion
The Glorious Mysteries:	The Resurrection
	The Ascension
	The Descent of the Holy Ghost
	The Assumption of the Blessed Virgin
	The Coronation of the Blessed Virgin

Figure 2.1: The 15 Mysteries of the rosary.

From its beginnings right up until the eve of the seventeenth century, the story of the rosary is one of continual evolution, only arriving at its final form sometime in the 1570s. The debate over who originated the practice of praying 150 *Aves*, each ten punctuated by a *Pater Noster*, a symbolic presentation of a garland of roses to the Virgin Mary,¹⁸ has raged for many years and is beyond the scope of this study. Anne Winston-Allen has summed up the current position regarding the rosary's origins:

The discovery in 1977... of a rosary text with *vita Christi* meditations one hundred years older [fourteenth century] than any previous ones eliminated all certainty about who 'wrote' the narrative rosary and has left open the still unresolved question of how the devotion might actually have evolved. (Winston-Allen, 1998: 7-8)

Irrespective of the precise origins of the practice, praying the rosary while simultaneously meditating on the life of Christ quickly became associated with the fifteenth-century Dominican Observant reform movement, and was equally quickly adopted by the lay community. The confraternity of the rosary was established in Cologne in 1475 and garnered 100,000 members within a mere seven years. Winston-Allen puts this astonishing popularity down to the facts that 'the rosary brotherhood cost nothing to join, had no required meetings, and accepted everyone' (Winston-Allen, 1998: 4). Furthermore, the system of indulgences associated with praying the rosary, in order to lessen the time one's soul spent in purgatory, contributed greatly to the lay community's adoption of the practice.

Having been associated with Catholic reform as part of its early history, the rosary was subsequently never far from the political front line. Winston-Allen has shown how the indulgences associated with the prayer led to it becoming 'the vehicle for a kind of legalistic "arithmetical" piety', and that this meant that 'spurious claims of indulgences ballooned to outrageous proportions of up to 120,000 years' (Winston-Allen, 1998: 5). This, of course, left the rosary open to attack from Protestant reformers, who rejected 'the entire practice along with... the doctrine of purgatory itself' (Winston-Allen, 1998: 5). Indeed, Martin Luther's own thoughts regarding the rosary are recorded in a copy of Marcus von Weida's rosary handbook:

¹⁸ For a detailed discussion of the elaborate symbolism of rose imagery as it relates to both Christ and Mary in rosary literature see Anne Winston-Allen's *Stories of the Rose: The Making of the Rosary in the Middle Ages*.

At one point Luther exclaims, “Where in the Devil do so many and various lies come from?” In the margin next to a story about a wayward youth who is reformed by praying the rosary, Luther comments: “And thus through a stupid work he merited justification.” Later, reacting to the tale of a nobleman saved from condemnation through the rosary-psalter and Mary’s intercession, Luther writes, “not through Christ, but by works.” (Winston-Allen, 1998: 130)

The result of this opposition from Protestant reformers led to the rosary becoming a prominent piece of Counter Reformation propaganda. Indeed, following the Council of Trent (1545-1563), far from falling into disfavour, the rosary actually gained in popularity (Winston-Allen, 1998: 151), with rulers such as Biber’s own patron, Maximilian Gandolph, strongly promoting the practice. With this they effectively declared their allegiance to Rome and their willingness to aid in ‘the propagation of the Faith’.

Politically, then, in Counter Reformation Europe, the rosary provided an ideal tool for the fulfilment of the Jesuits’ mission. It is also distinctly possible that the compilation of the *Mystery Sonatas* and their dedication to Maximilian Gandolph were politically motivated on the part of Biber. In suggesting the date 1676 for the *Mystery Sonatas*, Eric Chafe points out that the rosary was ‘a deeply personal concern of Archbishop Max Gandolph’s’, that he founded a confraternity in honour of the Virgin, and that he ordered the building of the pilgrimage church of Maria Plain (Chafe, 1987: 186). He also cites the fact that these events were reported by the contemporary historian Joseph Mezger in his chronicle of the year 1676 (Chafe, 1987: 186). It is, then, more than a possibility that Biber was seeking to gain favour from Maximilian Gandolph, tailoring the *Mystery Sonatas* to the Archbishop’s well known devotion to the rosary and Marian worship in order to enhance his own reputation or position. Indeed, James Clements has shown how the dedication page of the *Mystery Sonatas* employs numerous rhetorical devices and figures to flatter Maximilian Gandolph, making specific references to his advocacy of the rosary and devotion to Mary:¹⁹

¹⁹ See James Clements’s *Aspects of the Ars Rhetorica in the Violin Music of Heinrich Biber*.

Most Illustrious and Reverend Prince,
Lord, Most Sagacious Lord.

I am dedicating to you in all humility this harmony, which is consecrated to the sun of justice and the immaculate moon, since you are the third light, receiving illumination from both these divine heavenly bodies. For as a son you shine in holy radiance, and as a virgin you defend the virginal honour of the mother. Thus you are nourished, as you deserve, by the manna from heaven provided by the Son, Christ, and nursed by the Mother, Mary, without having to give anything in return. She has taken the first letter from her most blessed name and placed it at the head of your most illustrious name. In that way Mary has graced Maximilian. You will discover here my four-stringed lyre, tuned in 15 special ways for the playing of divers sonatas, preludes, allemandes, courantes, sarabandes, airs, chaconnes, variations etc., accompanied by a basso continuo; these I have elaborated with great care and, as far as my small capability allows, with great artistry. If you wish to know the purpose behind my task, I will explain it to you: I have consecrated everything that I have written here to the honour of the 15 Sacred Mysteries, since you promote these so ardently.

To Your Illustrious Highness

I dedicate the present works
most abjectly, declaring myself
to be your most humble servant,

Heinrich Ignaz Franz Biber. (cited in Goebel, 1991: 9)

Again, it is distinctly possible that inherent within this extremely florid flattery of Maximilian Gandolph, the purpose of which purports to be to petition the Archbishop to look favourably upon the pieces by emphasising how they coincide with his personal devotional outlook, is a message designed by Biber to gain favour for himself. If this were indeed the case it would appear to have worked; Biber had risen to the position of deputy Kapellmeister by 1679, and eventually became Kapellmeister in 1684.

Alongside its political context the rosary can also be seen as an ideal vehicle for the kind of meditative approach seen in Loyola's *Spiritual Exercises*; indeed, the

practice was extremely popular among the Jesuits. Furthermore, the devotion was more often than not performed with the aid of a rosary psalter or handbook, which could contain any or all of the following: a history of the rosary, the statutes of the relevant confraternity, prayers and litanies of the Virgin Mary, as well as listing the 15 rosary Mysteries and meditations upon each (Clements, 2002: 126). These handbooks usually contained images depicting each Mystery alongside the text, which the worshipper would use as visual stimuli to aid each meditation. It is thought that the engravings which precede each *Mystery Sonata* were taken from one such rosary psalter, although it has so far been impossible to identify which. This use of a visual aid to meditation in the praying of the rosary is particularly redolent of the approach to worship that Ignatius Loyola prescribes; *Vita Christi* and Marian meditations, much akin to the 15 rosary Mysteries, are key features of Loyola's four Weeks in the *Spiritual Exercises*.

The similarity between the way that many rosary handbooks present an image of each Mystery followed by accompanying text and associated meditations is also strikingly similar to another great work of Jesuit literature, Jerónimo Nadal's *Annotations and Meditations on the Gospels* (1595). Here again, as in the *Spiritual Exercises*, the reader is presented with episodes from the Gospels upon which to meditate. However, whereas in the *Spiritual Exercises* the 'Composition of Place' which the exercitant was expected to familiarise themselves with was left entirely up to the individual's imagination, here Nadal includes detailed, high quality engravings of each scene before the relevant text (see figure 2.2). These engravings even contain specific points of reference (such as A, B, C) to which the text directs the reader, making clear how precisely each part of the image is to be experienced.

ERIGITVR CRVX.

Matt. xxvij. Marc. xv. Luc. xxij. Ioan. xix.

128

ci



A. Foramen paratum ad crucem defigendam.

B. Varijs artibus erigitur crux; statuitur, & firmatur.

C. Variæ facies circumstantium, dum erigeretur & statueretur crux cum summo dolore IESV.

Figure 2.2: 'The Raising of the Cross' from Nadal's *Annotations and Meditations on the Gospels*.

Both the *Mystery Sonatas* and Nadal's *Annotations and Meditations on the Gospels* are, in turn, very much akin, in their presentation, to another form of literature with which the Jesuits became much involved; that is, *emblemata*. Originally not a religious form, the emblem book was quickly adapted as a pious educational tool in which the image and accompanying text relayed a spiritual or moral message to the reader.²⁰ However, unlike Nadal's step by step explanations of the Gospel narratives, the meaning of the emblem was often deliberately obscure, requiring the reader to possess a special knowledge and understanding of the complex symbolic language through which the image and text were related. This approach to the transmitting of meaning will be discussed, with regard to the *Mystery Sonatas*, in chapter 4.

We have now seen that Biber's *Mystery Sonatas* are a unique collection of devotional instrumental music based on the Catholic rosary. It will be shown that, consequently, Biber uses scordatura in an entirely original fashion throughout the course of the set. Indeed, the way in which the 15 tunings cause the physical structure of the violin to react in different ways in each sonata is strikingly redolent of the physicality of the experiential approach to meditation advocated by Loyola in the *Spiritual Exercises*; the violin does, in fact, seem to experience the joy, sorrow, and glory of the rosary narrative. It is the study of how Biber achieves this representation of experience that forms the remainder of this thesis.

²⁰ For a comprehensive history of the evolution of the emblem book see Michael Bath's *Speaking Pictures: English Emblem Books and Renaissance Culture*.

CHAPTER 3

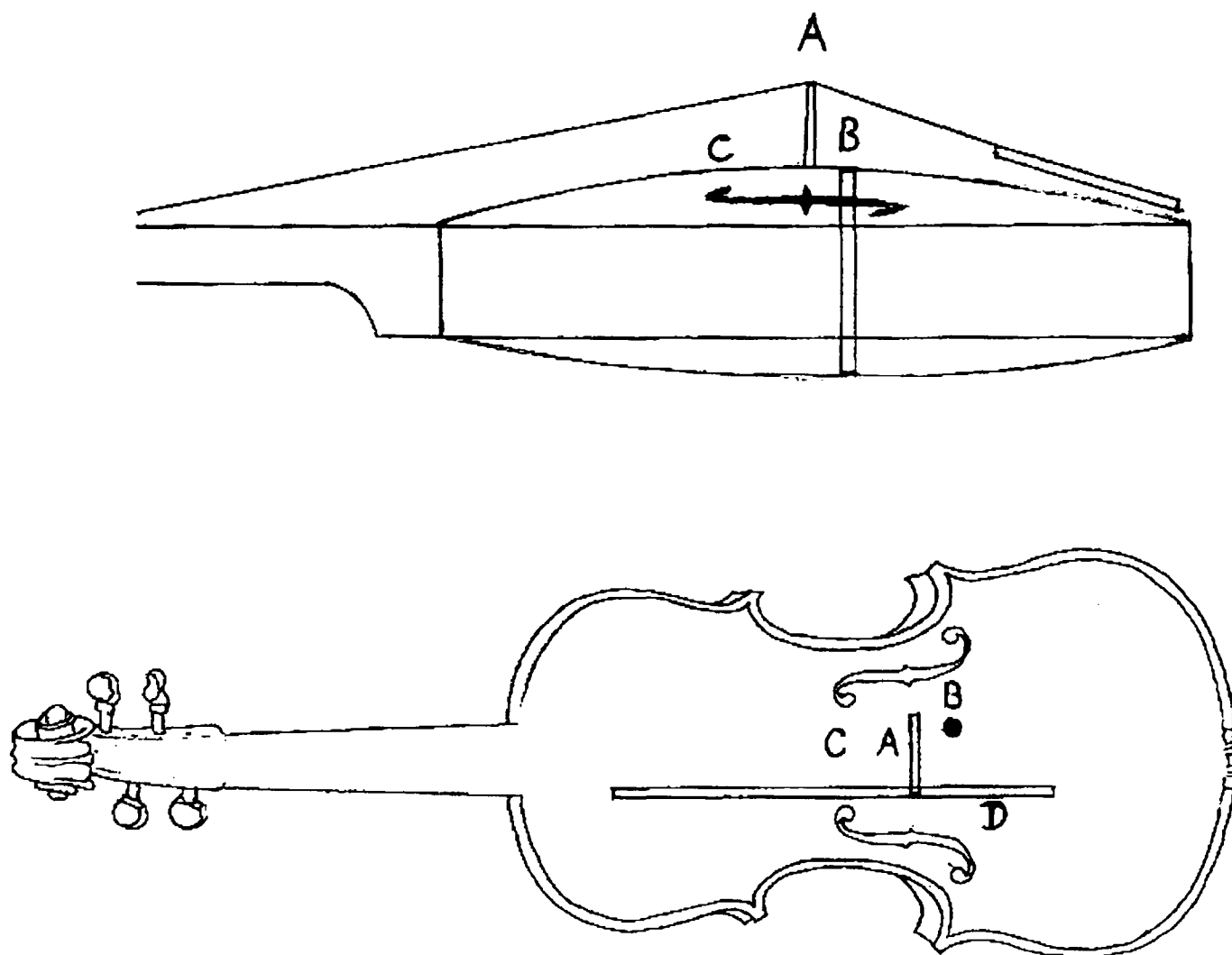
Scordatura and the Mechanics of the Violin

The truism that scordatura – the altering of the pitches of some or all of the violin’s strings – impacts upon the tone quality that the instrument produces, has begun to be acknowledged in late twentieth- and early twentyfirst-century writings concerning Biber’s music. It is the case, though, that a detailed examination of the extent of this impact has yet to be undertaken. This chapter aims to begin addressing this by providing a personal response, based on the author’s own experience of grappling with and delighting in the countless textural and timbral variations that are achieved throughout the *Mystery Sonatas*’ 15 tunings, to the mechanical changes that Biber brings about on the instrument itself. Such an approach cannot claim to be absolutely definitive, as each individual violin responds slightly differently to each scordatura. Therefore, in this chapter, descriptions of the character of sounds that the instrument produces (such as ‘acid’ and ‘flute-like’) are provided with the caveat that they are the results achieved on the author’s violin. However, the physical changes that take place upon the instrument as a result of the 15 tunings, and which, in turn, affect aspects such as projection, clarity, responsiveness, and intensity, are in fact universally applicable on all well set up violins.

With this in mind, a basic understanding of the mechanical processes at work on the violin, and how these processes affect the tone that it produces, is required.²¹ Unlike the viol, which in its original form had no soundpost or bass bar, the violin is not simply a resonating box. Rather, the combination of physical features, such as its arched back, protruding corners, f holes, and overhanging edges, and the way in which these work in combination with the bridge, soundpost, and bass bar, mean that the instrument is actually a much more complicated machine, whose structure functions as a system of interrelated levers and arches. This system is controlled by the relative active positions of the moveable bridge and soundpost, as they are placed within and upon the fixed three dimensional structure of the body. The boundary of this structure is stiffened by the overhanging edges, making it much stronger than a viol. Consequently, the violin is able to deal with far more tension and pressure, and

²¹ I am grateful at this point for the invaluable help given to me by the violin maker and restorer Edward Smith.

to produce a greater degree of projection and intensity of sound. The shape of the f holes on the front of the instrument serves to create areas of its body that are capable of moving independently (see figure 3.1). The bridge and soundpost, in association with the violin's divided front, create a double cantilever support system whereby the downward pressure from the strings is applied to the central platform, which is supported behind the bridge by the soundpost, and by the relatively weak narrow area between the f holes. The soundpost simultaneously transmits upward force from the back of the instrument (see figure 3.1). This arrangement allows the central platform on which the bridge sits to flex lengthways at the weaker narrow point between the f holes (see figure 3.1). However, as the soundpost is off-centre, sitting behind the treble foot of the bridge, this platform can also tilt from side to side. In order to balance this movement the bass bar functions to provide support for the bass foot of the bridge; while the soundpost proactively distributes forces about the instrument's body, the bass bar functions as a passive balancing device.



A = Downward force through the bridge from the strings.

B = Upward force through the soundpost from the back.

C = Weak point between the f holes. Combined with upward pressure from behind the bridge, allows the body to flex at this point.

D = Bass bar: provides counter-support for the bass foot of the bridge.

Figure 3.1: The combination of forces at work on the body of the violin.

Tension and the distribution of forces are, then, key aspects of the mechanical workings of the violin, and the primary source of this tension is the downward pressure exerted through the bridge onto the body of the instrument by the strings. It is through varying the amount and distribution of this downward pressure, by changing the pitches of the strings, that scordatura is able to alter the violin's tone quality. As it is the role of the violin's body to translate the various forces acting upon it into the instrument's characteristic sound, it follows that any variations of these forces, such as those produced by scordatura, will necessarily cause changes to the nature of that sound; this effectively broadens the palette of timbres available to a

composer who is familiar with these mechanical aspects of the instrument. In the case of the *Mystery Sonatas*, it is clear that Biber, more so than any composer before him or since, was absolutely aware of the mechanical responses that the act of retuning the strings would elicit from his violin, and the consequent results these responses would achieve in the sounds that it then produced. This is the principal reason for the 15 ‘special’ tunings; not to achieve virtuosity in the sense of playing notes and chords that would otherwise be impossible, but to harness every potential variant of tone colour, intensity of sound, power, and projection, towards the dramatic relaying of the rosary narrative.

Having established the critically important role of the downward pressure exerted through the bridge onto the body of the violin by the strings, it is perhaps surprising that very little attention has been paid by performers and writers to the question of pitch with regard to the *Mystery Sonatas*. For instance, in the *Cambridge Companion to the Violin* (1990), the two chapters on the subject of the instrument’s history and its mechanical workings – John Dilworth’s ‘The Violin and Bow: Origins and Development’ and Bernard Richardson’s ‘The Physics of the Violin’ – fail to address the issue at all. However, just as is the case with the way in which the violin responds to scordatura, different pitch standards vary the amount of force exerted on the body of the instrument. Pitch is, therefore, a critical factor in the violin’s production of tone:

Take an instrument... being in the natural pitch, and set it a note or two lower, it will go much heavier and duller and far from that spirit which it had before. (Morley, 1597: 275)

In his exhaustive *A History of Performing Pitch* (2002), Bruce Haynes has demonstrated that instrumental chamber music pitch in Salzburg during Biber’s time was high, usually at around $a' = 465$ (bb' at modern pitch). As part of his proof for this he cites a Sonata à 5 by Biber’s son, Carl Heinrich, which is contained in the Salzburg Cathedral archives. This piece is scored for *2 Obue bahse ex C. 2 Violini. Organo con Violoncello. Violone e Fagotto*. All the parts are written in G major except for the *Obue bahse*, whose parts are in A major. These instruments, which Haynes asserts were probably oboes d’amore, were playing at a pitch of about $a' = 415$, while the fact that the string parts are in G major indicates a performing pitch of $a' = 465$ (Haynes, 2002: 150).

Similarly, Biber's previous place of employment at Kroměříž, where it is possible that some of the *Mystery Sonatas* were composed, also made use of a high chamber music pitch. The 1739 inventory of instruments at the abbey lists 17 violins, including two by Amati (one of which is dated 1619) and two by Stainer, whose instruments Biber is known to have used. Listed separately are two *Geigen französischen Tons* (violins at French pitch). French pitch by this time was known to be $a' = 415$, and the listing separately of violins at that pitch proves that the other 17 were at $a' = 465$, in common with the abbey's other instruments (Haynes, 2002: 29).

We now turn to Biber's Stainer violin. Jacob Stainer 'became the most famous violin maker in Europe during his own lifetime' (Dilworth, 1999: 36) with a reputation which at the time easily eclipsed that of Nicola Amati (1596-1684), his only serious rival. Indeed, by the early eighteenth century, his fame was such that 'his violins commanded prices considerably higher in the London market than either Nicola Amati or Stradivari' (Boyden, 1965, 195). The desirability of Stainer's instruments is most effectively demonstrated by the sheer number of great violinists who used them; Francesco Geminiani, Giuseppe Tartini, Francesco Maria Veracini (who owned two), Pietro Antonio Locatelli, J.S. Bach, and Leopold Mozart, as well as Biber, are all known to have owned Stainer violins. In the case of Biber, Stainer himself confirms this in a letter which states that Biber 'is able to testify to the excellence of his work' (Boyden, 1965: 195).²² Little or nothing is known of Stainer's early career with regard to where he learned his craft, but his instruments display distinctly Cremonese features. However, he also introduced features of design which appear to be innovations of his own; for instance, although his instruments were highly arched like many of those from Cremona, Stainer's violins have a flat 'table-land central ridge' (Henley, 1973, 1095).

Most violins are able to function comfortably in one given pitch area, indeed this is what they were constructed to do. The design of a late seventeenth-/early eighteenth-century Cremonese instrument is such that its optimum pitch is around $a' = 415$; this is the pitch at which the forces coordinated by its various mechanical elements are distributed most effectively. In contrast, Venetian violins of the same

²² Indeed, it is possible that Stainer and Biber may have been more than passing professional acquaintances. Certainly Stainer was at least circumstantially involved in Biber's disappearance from Kroměříž, from where he left his post illegally in 1670 while ostensibly travelling to collect instruments from Stainer, only to reappear in a new post in Salzburg, where he remained for the rest of his life.

period, such as those by Matteo Goffriller (1659-1742), were constructed to operate at a much higher pitch level, usually around $a' = 465$. As such, they are far from their best at $a' = 415$. It is for this for this reason that few, if any, Venetian violins were sold in Paris while performing pitch there remained so much lower than in Venice. It is also why Goffriller's instruments have made such fine 'modern' violins; for them $a' = 440$ is a relaxed pitch, whilst still well within their comfort zone.²³ However, uniquely in the world of violin making at that time, Stainer's violins are able to function equally well at both high and low pitch standards, and, as we have seen, unlike any other maker, his instruments were enormously popular throughout Europe. Stainer violins were hugely valued where high performing pitches were standard, such as in Venice, Salzburg, Kroměříž and Innsbruck, as well as in regions where low pitches were used, such as Cremona, Milan, Paris, and England. Consequently, in the eighteenth century, when pitch levels started to become standardised across Europe at about $a' = 415$, Stainer's instruments remained hugely popular, a fact demonstrated by the number of great violinists who continued to play them.²⁴ Indeed, even Antonio Stradivari had to battle with the reputation of Stainer's violins, against whose his own instruments were often unfavourably compared.²⁵ In his book *Advice on Violin Playing, with Practical Examples* (Leipzig, 1774), George Simon Lohlein writes:

One finds that Stradivari worked his bellies and backs almost the same thickness, still he left a little more wood in the middle near the bridge than at the edges; in addition, his instruments are rather large and of a flat model, clumsy head and corners, peculiar sound-holes, and thick in wood. They have therefore a light, penetrating, oboe-like, but at the same time thin tone. On the other hand, Jacobus Stainer of Absam, like his master Amati,²⁶ worked with a high model – it is fairly thick in the middle, but in the cheeks [flanks], i.e. towards the edges of the

²³ I am again grateful to the violin maker and restorer Edward Smith for information regarding the nature of fine Italian violins and their suitability to different pitch areas.

²⁴ Bruce Haynes provides a detailed history of pitch standardisation in Europe during the first half of the eighteenth century in his chapter 'The General Adoption of A-1, 1700-1730' (Haynes, 2002, 159-178).

²⁵ Stradivari's instruments did not achieve their current status as the greatest violins until the early nineteenth century, when the process of modernising instruments began. For a summary of this process and its effects on the reputations of Stradivari and Stainer, see Kenneth Skeaping's article 'Some Speculations on a Crisis in the History of the Violin' in *The Galpin Society Journal* (1955).

²⁶ It was long assumed that Stainer must have learned his trade under Amati, although there is no evidence of this.

instruments, the wood is very thin. This able man even surpassed his master, although one finds very good instruments of Amati. (cited in Hill, 1902: 253)

Lohlein goes on to praise Stainer's violins further, saying that their tone is at once 'full and soft like a flute' (cited in Hill, 1902: 253) and that they are the most suitable instruments for solo playing.

Stainer's violins are generally small, lightly built with thinly cut wood, but highly arched, giving them enough strength to cope with the more extreme forces exerted by the strings at higher pitches. When tuned to $a' = 465$ they take on a highly charged character, over-strung so that they respond immediately to the merest touch of the bow. In this they behave very much like fine lutes of the period, which were likewise very lightly built and tightly strung, seeming to quiver at the slightest touch. Unlike most other instruments, then, a Stainer violin has a broader range of pitches at which it can comfortably operate, allowing Biber to raise and/or lower the strings to an often extreme degree without totally negating the instrument's sound producing abilities. This is of crucial importance with regard to the *Mystery Sonatas*. We have seen how the soundpost and treble side of the violin's body serve as crucial transmitters and distributors of forces on the instrument, performing a proactive role in the production of sound; in the *Mystery Sonatas* Biber never once increases the tension directly over the soundpost by raising the top string, he only ever lowers it. If this is done at a lower pitch, such as $a' = 415$, then the result is a catastrophic loss of tension at a crucially important point in the instrument's machine, and the resulting sound is extremely unresponsive and difficult to project. However, at a pitch of $a' = 465$, the lowering of the top string even by as much as a major third (such as in Sonatas VII and XII) means that, on a Stainer violin, the instrument is still operating within its comfort zone,²⁷ and that any changes that the scordatura makes to the resulting timbre are achieved within practicable boundaries.

²⁷ There is a lack of specific technical language to adequately describe the effects of different pitch levels and scordaturas on the violin's mechanical workings and tone production. Consequently, the term 'comfort zone' is used throughout this thesis to indicate whether or not the instrument is operating within its usual capabilities. When a violin is said to be functioning within its comfort zone the pitch level and or scordatura do not cause any undue alteration to the way in which tensions and forces are distributed about the instrument's body, meaning that the tone produced can still be regarded as a typical violin sound. However, when a violin is operating beyond its comfort zone its mechanical operation is altered so greatly by the forces acting upon it that the entire nature of the sound it produces on each string is changed. This is what David Boyden refers to when he criticises scordatura for causing the violin to lose its characteristic sound (Boyden, 1981: 57).

Choosing the correct pitch level at which to perform the *Mystery Sonatas* is, then, fundamentally important if one is to realise all of the variations of tone colour and timbre that Biber creates through his use of scordatura. However, to date, the author is unaware of any recorded performances at as high a pitch as $a' = 465$. A list of the 'standard' available recordings and their respective pitch levels is given in figure 3.2.

Artist	Year	Pitch
John Holloway	1990	$a' = 415$
Reinhard Goebel ²⁸	1991	$a' = 415$
Walter Reiter	2001	$a' = 415$
Monica Huggett	2004	$a' = 415$
Andrew Manze	2004	$a' = 440$
Pavlo Beznosiuk	2004	$a' = 440$

Figure 3.2: Pitch standards in recordings of the *Mystery Sonatas*.

A chronological list of recordings such as this demonstrates that a move away from the unsuitably low pitch of $a' = 415$ may be beginning to take place. However, it also illustrates a broader trend in recent historical performance for the adoption of what could be termed 'convenience pitches', meaning that music written to be performed at pitches as high as (or higher than) $a' = 465$ is often played at $a' = 440$, as this pitch is higher than the standard pitch of $a' = 415$. Indeed, $a' = 415$ has erroneously acquired the name 'Baroque pitch'; however, as Bruce Haynes's study shows, pitch levels throughout the Baroque period were far from standardised and, in reality, there is no such thing as Baroque pitch. As such, the adoption of convenience pitches can actually be seen to detract from the character of many early music performances:

Tuning any [string instrument] too high, or... too low, is like condemning a tenor singer for ever to sing alto or bass parts. No one would expect him to be able to do either without strain, but we do it

²⁸ In his CD liner notes Goebel explains that he uses four different instruments as well as a wide variety of strings which 'correspond to three different pitch standards ($a' = 415$, 440 and 465 Hz, respectively). He explains that this is done 'with a view to "optimizing" the sound in relation to the tuning required' (Goebel, 1991: 130). In other words, while the pitch standard remains at $a' = 415$ throughout his performance, if Biber specifies that a string should be tuned higher then he uses a string 'optimized' for higher pitches, rather than tune the same set of strings to each scordatura.

constantly to instruments with never a raised eyebrow. Yet the pitch of a stringed instrument is perhaps the most important single factor in determining the way it sounds, which in turn affects the sonority of the music it plays. (Harwood cited in Haynes, 2002: xxxix-xl)

Resolving the issue of pitch in a modern performance of the *Mystery Sonatas* is, then, far from simple. As we have seen, many violins are unable to function at a pitch as high as $a' = 465$, and consequently it would be ludicrous to ask a performer who only had access to such an instrument to perform them in this way, as the results would be just as distorted as when the pieces are performed at too low a pitch. It is the case, though, that it is most desirable to perform the *Mystery Sonatas* on an instrument capable of dealing with the forces involved, and which is able to realise the over-strung quality of $a' = 465$ as a pitch standard.

The Joyful Mysteries

Sonata I: The Annunciation – Normal Tuning: g d' a' e''

Passacaglia – Normal Tuning: g d' a' e''

The *Mystery Sonatas* do not, in fact, begin and end with the violin in scordatura; rather, the first sonata and the final Passacaglia are for a conventionally tuned instrument. By opening and closing the set in this way Biber establishes a norm, a point of departure and return against which the effects achieved by the retunings in the rest of the cycle can be assessed. The characteristic feature of a fine violin in its normal tuning is an equality of sound and speed of response across the whole range of the instrument, a feature which Biber showcases specifically in the first sonata's opening passagework (see example 3.1).²⁹

²⁹ In all examples, bar numbers and the division of movements correspond with the Doblinger edition of the *Mystery Sonatas*, edited by I. Kubitschenk, as this is the most widely available edition. This edition was used throughout this study alongside a facsimile of the original print (see bibliography for details).



Example 3.1: Passagework across the violin's whole range in Sonata I, 1st movement, bars 13-17.

Similarly, in the sonata's chordal writing, Biber is able to achieve equality in the different polyphonic voices, whether they are in high or low registers (see example 3.2).



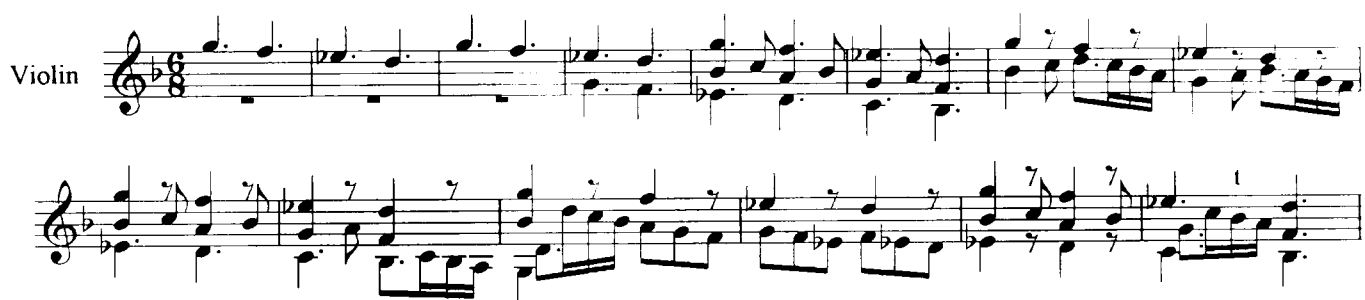
Example 3.2: Equal voicing in chordal passage. Sonata I, 2nd movement, bars 21-4.

The violin's ability to achieve clarity and intensity of sound, as well as power and projection, across its entire range is also demonstrated to full effect in the Passacaglia, which contains the highest note (g'') in the entire set at bars 67 and 69 (see example 3.3).



Example 3.3: Use of the high register in the Passacaglia, bars 67-72.

The same clarity of polyphonic writing seen in Sonata I is also present in the Passacaglia, particularly in the passage from bar 73, where three separate voices are easily distinguishable by the listener (see example 3.4).



Example 3.4: Three polyphonic voices in the Passacaglia, bars 73-86.

These examples help to illustrate a fundamental problem with much criticism of scordatura, namely that writers are content merely to assert that a tuning makes the violin ‘resonant’ or, in the case of Sonata VI, ‘unresonant’. This refers to the sympathetic resonance produced by the vibration of the other three strings when the instrument is bowed. For instance, in his discussion of Sonata IV, James Clements states that the piece’s tuning is ‘one of the most resonant... in the set’ (Clements, 2002: 143). However, it is the case that, in its normal state, tuned in fifths, the violin produces sympathetic resonance across its whole range and in many different keys. The effect of most scordaturas is actually to limit the resonance of the instrument, usually to one key or tonal area. For example, in the second *Mystery Sonata* (the Visitation) the violin is tuned to *a e' a' e''*, limiting the achievable sympathetic resonances to the sonata’s key of A major.

Sonata II: The Visitation – Scordatura: a e' a' e''

As we have seen, tuning up of the bottom two strings by a tone alters the sympathetic resonance of the violin, limiting it to the key of A; it does not, however, have a detrimental effect on the quality of sound produced by each of the four strings. Instead, the first scordatura has the effect of over-stringing the violin, but not beyond its comfortable limits. What this means is that, due to the tightening of the strings and consequent increase in tension, the bass register gains greater speed of response, in that, when the bow is drawn, it is easier to make the strings sound. Furthermore, as the bass end of the instrument has not moved too far and the treble side has not been detuned at all, there is no discernable loss of power or speed of response on the top two strings. The result of this scordatura, then, is essentially to energise the violin, meaning that the instrument responds immediately and with great power across its whole range at the slightest touch of the bow. This is reflected in the character of the music that Biber writes, with frequent and rapid changes between low and high registers (see examples 3.5i and 3.5ii):

The image shows two staves of musical notation. The top staff is labeled 'Violin in scordatura' and the bottom staff is labeled 'Violin at sounding pitch'. Both staves are in the key of A major (two sharps) and common time. The notation consists of three measures. In each measure, the top staff has a single note in the high register (treble clef), while the bottom staff has a chord of two notes in the low register (treble clef). This illustrates the wide intervallic leaps between the high and low registers.

Example 3.5i: Wide intervallic leaps between low and high registers. Sonata II, 1st movement, bars 34-6.

The image shows two staves of musical notation. The top staff is labeled 'Violin in scordatura' and the bottom staff is labeled 'Violin at sounding pitch'. Both staves are in the key of A major (two sharps) and common time. The notation consists of two measures. In each measure, the top staff has a melodic line that starts in the high register and moves down to the low register, while the bottom staff has a similar melodic line that starts in the low register and moves up to the high register. This illustrates the use of the violin's whole range.

Example 3.5ii: Use of the violin's whole range. Sonata II, Allamanda, bars 18-19.

Similarly, the fast passagework seen in the final movement is made much more suited to the low register of the violin by the over-stringing effect of the scordatura. This is especially the case with the *piano* echo in bar 5 (see example 3.6).

In this register on a normally tuned instrument it is necessary for the bow to make a heavier contact with the thick lower strings in faster passages than is the case here, in order to make them respond immediately. This means that the performer is able to utilise the newly energised violin in order to play much more lightly, as merely touching the strings is enough to make them respond. All of this is, of course, especially true if one plays at $a' = 465$, at which pitch the instrument's normal state is already to be somewhat over-strung.

The image shows a musical score for violin, divided into two systems. The first system compares 'Violin in scordatura' (top staff) and 'Violin at sounding pitch' (bottom staff). Both staves show a sequence of notes with a *forte* dynamic marking. The second system shows a more complex passage with a *piano* dynamic marking, where the scordatura version (top staff) has a more intricate melodic line than the sounding pitch version (bottom staff).

Example 3.6: Echo passage in low register, facilitated by the energised scordatura. Sonata II, final movement, bars 4-7.

Sonata III: The Nativity – Scordatura: $b f\# b' d''$

Upon tuning the violin to this scordatura one is immediately struck by the considerable change in tone quality that is achieved across the whole instrument. The bottom two strings are now tuned a major third higher than normal and are consequently at a pitch beyond that which is comfortable for the instrument. The same kind of increase in the speed of response achieved by the scordatura in Sonata II is again present on the bottom two strings, but whereas in the second sonata this did not have a detrimental effect on the instrument's capability to produce a varied tone, here the strings become much more difficult to control, creating a somewhat 'shouty' wall of sound, and making it difficult for the performer to achieve a *dolce piano*. This is emphasised by Biber's treatment of the top two strings; by raising the

second string³⁰ by a tone, the increased tension experienced by the bass register is added to in the treble, creating a thinner, more acrid tone.

The top string, however, is detuned by a tone. We have seen how the mechanical workings of the violin rely heavily on the soundpost/treble side of the instrument. The role of the soundpost in the exertion and balancing of tensions is a proactive one, engaged in the transmitting of forces, whereas the bass bar functions as a more passive counter-balance. By detuning the top string one reduces the downward force exerted on the body of the instrument, which consequently has a hugely noticeable effect on the violin's tone quality. Biber exploits this ability to completely alter the sound produced by the whole instrument by retuning only the top string in one of his most famous works, Sonata VI from the *Sonatae a Violino Solo* of 1681. The first half of this piece is for a normally tuned violin and consists of an opening sonata movement and a serious but virtuosic and extrovert Passacaglia. In the second half, however, the violin's top string is detuned by a tone. This has the effect of seeming to draw a veil over the sound of the whole instrument, which becomes notably darker and more muted. This is brilliantly highlighted by Biber in the arpeggio figuration that forms the violin's first entry after retuning (see example 3.7).

Example 3.7: Arpeggio figuration in Sonata VI (1681).³¹

³⁰ As the pitches of the four strings vary as a result of the scordaturas, they are often referred to numerically. First string = e'' string. Second string = a' string. Third string = d' string. 4th string = g string.

This effect on the whole instrument, achieved by retuning only the top string, is a hugely important aspect of scordatura, and vividly demonstrates the interrelatedness of the violin's mechanical workings, as well as showing how, in its normal tuning, it relies on the top string/bridge/soundpost relationships to achieve its characteristic tone and projection.

In Sonata III this muting effect is also observable on the top string itself, and is hugely heightened as a consequence of the tuning up of the other three strings. The combination of detuned top and raised lower three strings effectively means that the top string has made a much greater net loss of tension than would be the case if the lower strings were not tuned up; the distance between the top and bottom string has been reduced by an augmented fourth, meaning that the characteristic sounds of the instrument have been fundamentally altered. It is the case that, on a normally tuned violin, one would usually expect the top string to produce the brightest, most penetrating sound; indeed, many 'modern' players will go to considerable lengths in order to avoid the *e'* string in certain passages for this very reason. In Sonata III, however, as a result of the scordatura moving the bottom three strings upwards and the top string downwards, the brightest, most powerful strings are at the bottom of the instrument, while the top string becomes much less immediate and full sounding. This reversal of the way in which one expects the violin to behave is fully exploited by Biber in the way that he voices various parts of the sonata. After opening the piece in the higher, more muted, thinner sounding register of the upper two strings, bar 3 introduces a polyphonic chordal texture. It is notable that, at this point, it is the lower voice which predominates, containing the majority of the thematic material, whereas one might usually expect this to occur in the treble voice (see example 3.8).

The image shows two staves of musical notation. The top staff is labeled 'Violin in scordatura' and the bottom staff is labeled 'Violin at sounding pitch'. Both staves are in G major (one sharp) and common time. The music consists of a series of chords and moving lines. The lower voice (bottom staff) is more active and contains the main thematic material, while the upper voice (top staff) is more static and provides harmonic support. The notation includes various note values, rests, and accidentals.

Example 3.8: Dominating lower voice in Sonata III, 1st movement, bars 3-5.

³¹ This example presents a realisation by the author of Biber's instruction '*harpeggio*'.

In bar 13, as in Sonata II, Biber introduces much faster semiquaver passagework, again predominantly low down in the instrument's range (see example 3.9). However, whereas in the second sonata the increased responsiveness occasioned by the scordatura led to the creation of a supercharged yet delicate sound, here the results are more explosive and strained due to the extending upwards of the lower strings beyond what is comfortable for the instrument.

The image shows a musical score for two staves. The top staff is labeled "Violin in scordatura" and the bottom staff is "Violin at sounding pitch". The tempo is marked "Presto". The music consists of rapid semiquaver passages in a low register, with the scordatura staff showing a higher pitch than the sounding pitch staff.

Example 3.9: Predominantly low passagework in Sonata III, 1st movement, bars 13-17.

In the second movement (Courente), Biber again creates a polyphonic texture on the violin, this time consisting of two distinct voices and registers (see example 3.10). As a result of the scordatura these voices are differentiated much more clearly than would otherwise have been the case. The first voice to enter is on the lower, more powerful and responsive strings, while the second voice, on the top string, is lighter and more graceful. This example shows Biber to make creative use of the tone colours and textures which scordatura makes available to him, achieving a dialogue between voices of utterly contrasting timbres, which would not be present on a conventionally tuned violin.

The image shows a musical score for two staves. The top staff is labeled "Violin in scordatura" and the bottom staff is "Violin at sounding pitch". The tempo is marked "Courente". The music shows two distinct voices: Voice 1 on the lower strings and Voice 2 on the top string. The scordatura staff shows a higher pitch than the sounding pitch staff.

Example 3.10: Two voices established at the opening of Courente, Sonata III.

Having established the contrasting characters of the two polyphonic voices at the opening of the Courente, the remainder of the movement's *A* section (from bar 5) is dominated by the more aggressive tone quality of the lower voice, which carries the majority of the musical material. By contrast, in the *B* section (from bar 17), the higher, more delicate voice predominates. In this way the tension established in the opening four bars between the two contrasting timbres, which were in turn created by the scordatura, can be seen to be played out on a larger structural scale across the whole movement.

Elsewhere in Sonata III, the way in which the scordatura gives distinctive characters and voices to the different strings can help the performer to make interpretative decisions, and the Double movement which follows the Courente is a case in point. Biber, as Bach would do approximately 50 years later in his First Partita for unaccompanied violin, tends to compose Doubles made up of a constantly moving line of quavers or semiquavers. The great skill of both composers in these movements is to achieve the effect of various voices in dialogue in what is apparently a single musical line, and in Biber's case, the use of scordatura in this regard is crucial. At the opening, the on-beat thematic notes are almost exclusively in the lower register, giving the material a weighty character (see example 3.11i). By contrast, at the third beat of bar 10 this pattern is reversed, with the on-beat notes occurring in the treble register (see example 3.11ii). This, in turn, creates a much lighter flute-like texture. In these registers on a normally tuned instrument, these two passages would usually have the opposite characters, with the top string notes being the brightest and the lower passagework being more difficult to project.

Double

The image shows two staves of musical notation. The top staff is labeled 'Violin in scordatura' and the bottom staff is labeled 'Violin at sounding pitch'. Both staves show a sequence of notes in a 3/4 time signature. The top staff notes are lower in pitch than the bottom staff notes, illustrating the effect of scordatura.

Example 3.11i: Thematic notes in the bass register at the opening of the Double, Sonata III.

The image displays two systems of musical notation. The first system consists of two staves: the top staff is labeled 'Violin in scordatura' and the bottom staff is labeled 'Violin at sounding pitch'. Both staves show a melodic line in 3/4 time with a key signature of two flats. The second system shows a piano accompaniment with two staves, featuring a rhythmic accompaniment of eighth notes and chords.

Example 3.11ii: Thematic notes in the treble at bar 10 of the Double, Sonata III.

In this way, then, the distinctive tone qualities created by the scordatura provide the performer with clues as to the way in which certain passages should be played, even if these clues point towards solutions which confound one's expectations.

Material which exploits the contrasting timbres in the violin's bass and treble registers also dominates the third sonata's closing Adagio section. Bar 1 introduces a falling melodic figure which will become the predominant feature of the sonata's remaining material (see example 3.12). It is significant that this figure is again presented by the lower voice in the texture, which, as a result of the scordatura, is the most forceful on the instrument.

The image shows musical notation for the Adagio section of Sonata III. It features two staves: 'Violin in scordatura' on top and 'Violin at sounding pitch' on the bottom. The top staff is marked 'Adagio' and shows a falling melodic figure. A bracket above the top staff spans from the second measure to the end of the section, labeled 'Falling figure'. The bottom staff provides a harmonic accompaniment.

Example 3.12: Falling figure in Sonata III, Adagio, bars 1-2.

In this closing Adagio it is also notable that almost all of the faster moving passagework, such as the semiquaver movement in bars 8 and 9, takes place on the violin's lower three strings, which as we have seen have become by far its most responsive and bright sounding (see example 3.13).

Violin in scordatura

Violin at sounding pitch

Example 3.13: Semiquaver passagework on the lower three strings. Sonata III. Adagio, bars 7-9.

Furthermore Biber appears to have been particularly careful about the way in which he arranged the chordal writing in this section to take advantage of the variety of textures available to him through the scordatura. When the chords occur in the instrument's lower register Biber writes a two or three-note chord on every quaver (see example 3.14i). In this range, due to the powerful and responsive nature of the raised strings, the listener is able to discern each voice quickly. However, when chords occur in the treble register, the top string is much less responsive to the bow and more muted in tone. Consequently Biber thins the accompanying texture, writing very few three-note chords and having the lower voice move in crotchets, half the speed of the lower register chords (see example 3.14ii).

Violin in scordatura

Violin at sounding pitch

Example 3.14i: Quaver movement in chords on the lower three strings. Sonata III. Adagio, bars 4-5.

Violin in scordatura

Violin at sounding pitch

Example 3.14ii: Crotchet movement in treble register chords. Sonata III, Adagio, bar 10.

Sonata IV: The Presentation in the Temple – Scordatura: a d' a' d''

In this sonata the scordatura moves back into the violin's comfort zone, with a relaxing of tension, particularly on the bottom strings. By detuning the middle two strings back to their normal pitches (*d'* and *a'*) Biber ensures that the muting effect seen on the top string in Sonata III is now applied to the whole instrument. This drawing of a veil over the violin's sound is exactly the same effect that we observed in Sonata VI from the *Sonatæ a Violino Solo*, and once again demonstrates that the interaction of the retuned strings in scordatura is perhaps the most important factor in its creation of timbre. However, in this sonata, the overall muting effect produced by the lowered tuning is mitigated against by the bottom string which, although a tone lower than in the previous sonata, remains a tone above its normal level. This provides tension and immediacy to the sound at the bass end, which counterbalances the loss of brilliance on the top half of the instrument. The bottom string's role in affecting the sound of the other three strings by providing tension in the body of the violin is made obvious by the fact that the bottom string itself is, in fact, hardly used in the whole piece; indeed, it has only 35 notes, 17 of which occur in one eight-bar variation (from bar 57). This, combined with the fact that all of these notes are just as easy to play on a conventionally tuned bottom string (sometimes easier), is surely an indication that Biber's reasons for retuning the string in this way go beyond the traditional view of scordatura as a piece of virtuosic trickery or convenience. The other traditional view, that the retuning provides extra resonance (by which is meant sympathetic resonance), is undoubtedly true. However, it is the contention of this thesis that it is the utilising of the more complex interactions between the different strings, caused by the distribution of forces upon the violin's body, and how they serve to create a variety of different textures and timbres, that is Biber's real purpose and great achievement in the *Mystery Sonatas*.

In order to test this hypothesis one need only to play Sonata IV in its prescribed tuning and then, for comparison, with the bottom string tuned conventionally (producing the tuning *g d' a' d''*). Upon doing this it immediately becomes clear that the bottom string, when tuned up, adds a speed of response and immediacy to the sound of the whole instrument, even when one is not playing on the bottom string itself. For instance, the top string, while retaining the darker muted tone colour observed in the sixth 1681 sonata (*g d' a' d''*), does not lose as much of its power or ability to project. After the effect seen in Sonata III (*b f^z b' d''*), where the

raising of the lower three strings caused a notable loss of energy in the top string, this reinforcing of the top string may come as a surprise. This brings us back to the concept of the net losses and gains of tension which the instrument experiences as a result of the different scordaturas. In Sonata III the net loss experienced by the top string as a result of being detuned by a tone, combined with the raising of the bottom two strings by a major third (from their normal pitches) and the second string by a tone (to b'), had a debilitating effect on its ability to function in the normal way; the violin had gone beyond its comfort zone. However, in Sonata IV, the net losses and gains of tension are much less severe, meaning that although the muting effect of the top register does occur, it does so within what is a comfortable range for the instrument. It is in this way that, through his thorough knowledge of both the mechanical workings of the violin and the multitude of changes effected to it by scordatura, Biber is able to create so many different shades of texture, timbre, power and projection on each string throughout the *Mystery Sonatas*.

We have already seen that, in Sonata IV, Biber is extremely sparing in his use of the bottom string, despite its crucial role in relation to the instrument's sound as a whole. This avoidance of the least muted string on the violin is deliberate, and creates a particularly special moment at the only point in the piece when it is used to a significant degree in bars 57-64 (see example 3.15).

The image displays a musical score for two violin parts. The top staff is labeled 'Violin in scordatura' and the bottom staff is labeled 'Violin at sounding pitch'. Both staves are in 3/4 time and G major. The top staff features a melodic line with several notes marked with a 't' (tutti) and a 'p.' (piano) dynamic. The bottom staff provides a harmonic accompaniment, with notes marked with a 'p.' dynamic. The score is divided into two systems, each containing four measures. The first system shows the initial entry of the bottom string, and the second system shows a continuation of the texture with various articulations and dynamics.

Example 3.15: The only significant use of the bottom string in Sonata IV, bars 57-64.

Musically speaking, this section is of great structural importance to the piece, as it reprises the opening thematic material for the first time after a series of six eight-bar

variations. In this way it serves as a point of closure for the sonata's first extended musical paragraph, as well as being a point of initiation for the second; indeed, it is the piece's most important structural moment. The only difference between these eight bars and the opening is that the theme sounds an octave lower. Furthermore, it is the case that technically speaking, from the performer's point of view, these bars are no more difficult to play on a normally tuned instrument than they are in Biber's scordatura (as is the case with the other 18 notes assigned to the bottom string in the piece). However, the effect of the retuning on the bottom string itself is as crucial at this important structural point as its effect on the other strings in the rest of the sonata. Again, if only the top string is tuned down, the muting effect and loss of power that we have observed taking place on the instrument is most severe on the bottom string, meaning that relative to the string above it, it is considerably weaker. As a result of tuning up to an *a*, though, the bottom two strings function much more as two equal partners, making more sense of the different musical voices implied by the writing (see example 3.15 above). Here again, then, Biber's scordatura is no mere trick used for virtuosic effect, nor is it simply a matter of achieving sympathetic resonance on the violin's open strings. Rather, it is indelibly linked to the content of the piece, functioning to create and to highlight the sonata's musical characters.

Despite the use of the bottom string to prevent the over-muting of the whole instrument in the way that we have seen above, it is undoubtedly the case that such a muting effect does take place to some degree. This again demonstrates the extent to which the soundpost/treble side of the instrument exerts control over its sound, for although the bottom string is tuned up to the same degree that the top string is tuned down, it is the muting effect of the downward tuning which gives the instrument's tone its predominant character, while the bottom string, with its counteracting tension, serves to regulate the degree to which that character is achieved. This illustrates in sound the proactive and passive roles played in the instrument's machinery by the soundpost and bass bar respectively. Furthermore, this veiled tone quality is in stark contrast to the previous sonata, in which the violin produced a predominantly penetrating, acrid sound in all but its highest register. As we shall see, the relationship between one sonata and the next is, in fact, an integral aspect to the way in which the *Mystery Sonatas* and the scordaturas function as a whole, and will lead us to question David Boyden's assertion that, if more than one scordatura is used in a performance, then more than one violin must also be used. From a purely

mechanical standpoint it is the case that a single violin responds very differently if it progresses through each of Biber's 15 'special' tunings in turn, compared with a performance in which two (or more) instruments are used alternately. This brings us to the question of how long the instrument was intended to have to settle into each new tuning, a puzzle which has so far been impossible to solve. However, there are also symbolic reasons that the use of a single instrument may be a desirable option for the performer (see chapter 4), notwithstanding the fact that, in the *Mystery Sonatas*' dedication, Biber very specifically refers to the diversity and variety of the 15 'special' tunings and, just as specifically, to the singularity of his 'four-stringed lyre'.

Sonata V: The Finding in the Temple – Scordatura: a e' a' c#''

In Sonata V, the final Joyful Mystery, the set concludes with an A major scordatura of the kind seen in Sonata II (*a e' a' e''*). However, whereas in the second sonata the top string remained 'as normal', allowing the whole instrument to retain its overstrung and reinforced tone quality, here it is tuned lower (*c#''*) than at any other point in the set so far. In this sonata the bottom two strings are both raised by a tone from normal which, combined with the detuning of the top string to *c#''*, produces a significant net gain in tension at the bottom of the instrument, very much like that seen in Sonata III (*b f# b' d''*). Crucially, though, unlike the third sonata, the lower strings remain within the instrument's comfort zone, and as such their responsiveness and power is enhanced without sacrificing any of the subtle tone colours of which they are capable. The result this achieves in sound is essentially the opposite of that observed in Sonata IV, in which the net loss of tension experienced by the top string was much less than is the case here. This meant that, in Sonata IV, the top string retained control over the whole instrument's characteristic sound, while the tuning up of the bottom string by a tone influenced the degree to which that sound was achieved. By contrast, in Sonata V, the fact that the second string is also tuned up, combined with a further lowering of the top string, means that the bass side of the instrument makes a decisive gain in net tension. Consequently, it is now the bass end of the instrument that controls the character of the sound produced, while the detuned top string functions to influence the degree to which that character is achieved: the two sonatas are, in effect, mechanical mirrors.

By raising the bottom two strings by a tone from normal and lowering the top string to a $c\sharp$, Biber is able to achieve a gradual progression from the powerfully charged, very responsive bass register, towards a more delicate viol-like colour in the violin's top register, without any sudden shifts in tone. In this it again contrasts with Sonata II, in which, as a result of tuning the top string conventionally, the instrument became energised across its entire range.

Yet again, then, it can be seen that Biber's scordatura is a far more complex device than has hitherto been acknowledged. Rather than it being a question of whether or not a particular tuning is 'resonant' – indeed all of the tunings except Sonata VI produce sympathetic resonances related to their sonata's final – it is the case that Biber is able to create a variety of tone qualities across the range of the instrument, as well as effectively using the strings as a graphic equaliser in order to highlight or reduce the dominance of a particular register.

As we have seen in previous sonatas, in Sonata V the effect that the scordatura has on the different registers is once again reflected in the character of the music. For instance, Biber makes much use of the over-strung lower register for fast, lively passagework (see example 3.16i), as well as for the confident opening statements of the Allamanda and Gigue (see examples 3.16ii and 3.16iii), all of which would be much less suited to their respective registers on a conventionally tuned instrument. The fact that, although over-strung, this bass register has lost none of its ability to vary the production of tone colour (unlike Sonata III) is then demonstrated at the opening of the more delicately beautiful Sarabanda (see example 3.16iv).

Presto

Violin in scordatura

Violin at sounding pitch

Example 3.16i: Use of the over-strung lower register or fast passagework. Sonata V. Pæludium, bars 8-12.

Violin in scordatura

Violin at sounding pitch

Example 3.16ii: Lower register theme at the opening of the Allamanda, Sonata V.

Violin in scordatura

Violin at sounding pitch

Example 3.16iii: Lower register theme at the opening of the Allamanda, Sonata V.

Sarabande

Violin in scordatura

Violin at sounding pitch

Example 3.16iv: Use of the lower register at the opening of the Sarabanda. Sonata V.

In Sonata V, again in direct contrast to the previous piece in which the bottom string was conspicuously avoided, Biber is very sparing with his use of the top string.

Indeed, for much of the sonata, particularly in the dance movements, it is employed to produce not only a contrast in register, but also, due to the weakened nature of the string relative to the bass, an echoing voice (see examples 3.17i and 3.17ii).

Example 3.17i: Treble voice echo created by the scordatura in the Allamanda, bars 9-10, Sonata V.

Example 3.17ii: Treble voice echo created by the scordatura in the Double, bars 3-6, Sonata V.

Furthermore, in less obvious passages, the various characters that the scordatura gives to the violin's different registers can again help the performer to make musical interpretative decisions. For instance, in the sonata's opening Præludium, Biber makes full use of the instrument's whole compass, and in bars 3-4 and 5-7 writes phrases which begin at the top end of the range, descend towards the lower register, and then re-ascend (see example 3.18). On a conventionally tuned instrument one would expect the higher register to sound the brightest, and might consequently decide to *diminuendo* towards the lower register in the middle of each phrase. However, as a result of the scordatura, the violin actually gains power, focus, and projection as it descends towards the bass register, and as a result a more appropriate choice might be to *crescendo* towards these naturally more powerful parts of each phrase. In bars 3-4 this is emphasised by the placing of a three-note chord at the lowest part of the phrase. Again, this is perhaps not what one would do on a conventionally tuned instrument and, as such, the scordatura can be seen to broaden the instrument's expressive palette, rather than reducing it.

Implied phrasing: _____

Violin in scordatura

Violin at sounding pitch

Example 3.18: Phrasing implied by the scordatura in Sonata V, Præludium, bars 3-7.

The Sorrowful Mysteries

Many of the distinctive features of the scordaturas that we have seen in the first five *Mystery Sonatas* are also present in the five Sorrowful Mysteries. However, due to the opposing nature of the music's subject matter, Biber makes use of a variety of much more extreme retunings. Indeed, whereas in the Joyful Mysteries only one sonata can truly be said to extend the instrument beyond what is comfortable, in the Sorrowful Mysteries Biber explores the full gamut of textural and timbral possibilities that lie outside the violin's comfort zone.

Sonata VI: The Agony in the Garden – Scordatura: $ab\ eb' g' d''$

The Agony in the Garden contains what is, in many ways, the most extreme and bizarre tuning in the *Mystery Sonatas*; indeed, it is the only tuning that is not specifically related to its sonata's final (in this case C). Ironically, this means that the question of sympathetic resonance, or more accurately, the lack of sympathetic resonance, is suddenly made far more important than has previously been the case. By tuning the violin in this way Biber essentially splits it into two keys ($A\flat$ and G) a semitone apart, divided between the bass and treble registers. This means that when notes are sounded which are consonant with, and produce sympathetic resonances on, the upper two strings, there is absolutely no sympathetic resonance from the lower two strings, and vice versa. In this way Biber succeeds in creating a uniquely

empty tone quality. as much of the harmonic support from the open strings above and/or below each note, which would usually contribute to its colour, is absent. This, then, is the first example in the Sorrowful Mysteries of Biber going beyond the instrument's comfort zone, and he achieves it without moving any of the strings more than a tone away from their normal pitch. As such, like Sonata IV (*a d' a' d'*), very little of the violin's responsiveness and ability to project is lost in any register; the characteristic drawing of a veil over the whole sound that we have previously seen also occurs here as a result of the net loss of tension on the soundpost/treble side of the instrument, along with a simultaneous relative gain in the immediacy of the lower two strings. However, none of this occurs to the extent that any register is made much weaker than the other. Instead, it is the remarkable effect created by the lack of sympathetic resonance, combined with the subtle balances of register caused by the instrument's net gains and losses of tension, that give this sonata its unique sound.

After the previous two sonatas, in which the bottom and top strings respectively were consciously avoided, the relative equality of tone at the outer extremes of the instrument allows Biber to once again make full use of the violin's compass, both in polyphonic chordal sections and in fast passagework (see example 3.19i and 3.19ii).

Example 3.19i: Utilising the high register in Sonata VI, bars 85-6.

Example 3.19ii: Use of the instrument's entire range in Sonata VI, bars 94-5.

In this last example the small increase in the responsiveness and immediacy of the sound on the lower two strings (within a muted overall tone colour) engendered by the scordatura, combines with Biber's phrase markings to create a more effective dialogue between the treble and bass registers than would be the case on a conventionally tuned instrument. In the more delicate muted top register the sighing slurs and the *diminuendi* which they imply create the effect of an imploring question which is then answered definitely by the more powerfully charged lower register.³²

Sonata VII: The Scourging – Scordatura: c' f' a' c''

Sonata VIII: The Crowning with Thorns – Scordatura: d' f' bb' d''

The subjects of the second and third Sorrowful Mysteries of the rosary are the physical punishments and humiliations that Jesus endures having been condemned to death, but before he is taken away for crucifixion. As a result Biber employs two scordaturas that are very much related, and which affect the instrument in very similar ways. As such, they are assessed here as a pair.

Having extended the violin beyond its comfort zone by nullifying its production of sympathetic resonance in Sonata VI, in Sonatas VII and VIII Biber returns to and goes beyond the precedent set in Sonata III (*b f# b' d''*), by raising and lowering the strings to the absolute limits of what is possible. Indeed, in these two pieces, he has essentially deployed the scordatura so as to prevent his fine Stainer violin from functioning properly. In the lower register the strings are raised to such an extent that almost all of the player's ability to control the kind of sound that the instrument produces is taken away; the violin is so over-strung in this register that sound simply leaps from the instrument, almost invariably at a *forte* dynamic, and with a distinctly harsh tone. Conversely, on the top string, the detuning to *c''* and *d''* respectively would usually apply the kind of muted darkening to the sound across the whole instrument that we have seen in *Mystery Sonata II* (*a d' a' d''*) and the 1681 Sonata VI (*g d' a' d''*). Here, however, this effect is completely obliterated by the massive increases in tension which take place at the bottom of the instrument,

³² It is tempting to apply specific programmatic events to passages such as this, as does Davitt Moroney in his CD liner notes to his and John Holloway's 1990 recording of the *Mystery Sonatas*, claiming that this passage illustrates the falling droplets of blood that Jesus sweats. It could also be argued that the dialogue at this point represents Jesus's questioning of and subsequent acceptance of his fate in the garden of Gethsemane. However, pictorial interpretations such as these can be inappropriate. For a full discussion of the danger of such an approach to the *Mystery Sonatas*, see chapter 4.

leaving the top string sounding weak and thin, especially when compared to the sheer wall of sound produced in the bass register.

In previous sonatas (IV and V) we have seen how Biber utilised the intentional weakening or unbalancing of certain strings to produce changes in the sounds of the other strings, and how he then uses the weaker unbalanced register extremely sparingly. However, in Sonata VII especially, he seems to consciously employ the extremes of the violin's range, as well as sudden shifts between the two registers, however unpleasant the effect may be. This draws particular attention to the debilitating effects of the scordaturas (see example 3.20i and 3.20ii).

Example 3.20i: Sudden shifts between registers in the opening of the Sarabanda, Sonata VII.

Example 3.20ii: Sudden shifts between registers in the opening of Variatio 1, Sonata VII.

Here, the large intervallic leaps, combined with the extreme power in the bass and relative weakness in the treble created by the scordatura, mean that the performer is virtually unable to phrase the Sarabanda and its variations in the subtle way that one would usually expect in such a movement. Rather, it is an unavoidable fact that a loud, rasping accent will be produced on the open bottom string in bar two, on what is essentially the 'wrong' beat of the bar. Also, the hugely tightened bottom string negates the natural decay to the note which would usually be produced by the baroque bow, adding still further to the distasteful affect.

The setting of such a traditionally serious and beautiful dance to an extreme scordatura in this way effectively produces a parody of the Sarabanda, deliberately reducing one of the Baroque's most graceful dance forms to apparently clumsy stamping.³³ Parody also plays a significant role in Sonata VIII, the opening movement of which presents us with thematic material which is very similar to that heard at the opening of Sonata II (see examples 3.21i and 3.21ii).



Example 3.21i: Opening phrase of Sonata VIII, outwardly similar to opening of Sonata II (see below).



Example 3.21ii: Opening phrase of Sonata II.

Outwardly, then, the openings of these pieces are of similar, if not identical, character, and if the violin were to be tuned conventionally this would indeed be the case. However, the extreme nature of the scordatura in Sonata VIII, and its consequent effect on the tone quality that the instrument produces, means that, for the listener, the perceived characters of the two movements are very different, and it is the scordatura alone which creates this contrast. Yet again, then, far from being a piece of virtuosic trickery or being simply concerned with the achieving of sympathetic resonance, it is the case that Biber's use of scordatura is a hugely significant aspect of his compositional language in the *Mystery Sonatas*, holding the key to an understanding of their unique musical character.

³³ During the late seventeenth century it was still common to find two types of sarabande, fast and slow. In this case, however, the quick divisions in the variations which follow preclude a fast tempo and determine that the movement is of the slow variety.

Sonata IX: The Carrying of the Cross – Scordatura: c' e' a' e''

The tuning in Sonata IX succeeds in combining aspects of several of the previous scordaturas; in the treble register Biber utilises the energising effect that was seen in Sonata II, along with the extreme raising of the bass register seen in Sonatas VII and VIII. The combined effect of raising the bottom string to such a degree and not lowering the top strings at all is that this tuning is, in fact, the most over-strung across the violin's whole range in all the *Mystery Sonatas*. However, unlike the previous two sonatas, in which Biber made conspicuous use of the unpleasant under- and over-strung extremes of the instrument, here the massively tuned up bottom string is, once more, largely avoided. Indeed, Sonata IX is perhaps most notable for the almost total dominance of the treble register, even more so than was the case in Sonata IV, which, as we have seen, did at least contain a thematic statement featuring the bottom string. Here, however, only 11 notes occur on the bottom string in the entire sonata, and astonishingly, only two of these are not bass notes in chords. The role of the bottom string, then, is not as it was in Sonatas VII and VIII, in which the aggressive tone produced by the string itself was a prominent feature. Rather, its purpose is much more as it was in Sonata IV, functioning through the tension it creates on the violin to affect the sound across the instrument's other strings. The result of this is a very strong, bright sounding treble register, enabling Biber to write high, fast passagework which features the highest note (f''' in bar 21) in the *Mystery Sonatas* thus far³⁴ (see example 3.22).

³⁴ Indeed, only the Passacaglia contains a higher note, g''' in bars 67 and 69.

Violin in scordatura

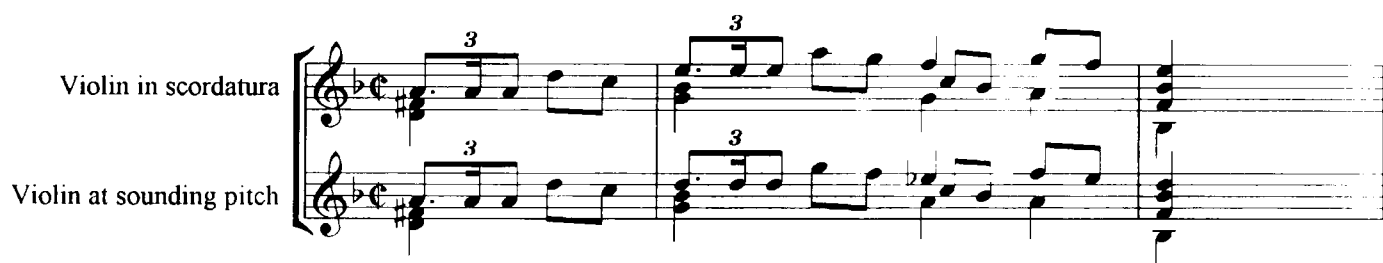
Violin at sounding pitch

The image displays a musical score for two violin parts. The top part is labeled 'Violin in scordatura' and the bottom part is labeled 'Violin at sounding pitch'. Both parts are written in treble clef with a common time signature. The notation consists of six systems of two staves each. The first system shows the initial notes of the piece. The second system continues the melodic line. The third system features a more complex rhythmic pattern with many beamed notes. The fourth system shows a continuation of the melodic line with some chromaticism. The fifth system has a similar melodic flow. The sixth system concludes the passage with a final cadence. The overall texture is dominated by the high register of the violin.

Example 3.22: Dominating treble register in opening movement of Sonata IX, bars 18-23.

Sonata X: The Crucifixion – Scordatura: g d' a' d''

We have already seen Biber's use of this tuning in the sixth 1681 violin sonata, in which he tunes the top string down by a tone half way through the piece. This graphically highlights the change in timbral quality that the retuning creates, drawing a veil over the sound of the whole violin by lessening the crucial controlling tension over the soundpost/treble side of the instrument. As a consequence of not detuning the top string to an extreme degree, and by not moving any of the other strings away from their conventional tunings, Biber ensures that the violin does not suffer any significant net loss of tension. This means that, relatively speaking, the violin's responsiveness and projection of its characteristic sound is not adversely affected in any register. In other words, the only significant change from a conventionally tuned violin is in the nature of that characteristic sound; it is the tone quality and colour that is altered, not its projection and power. As a result, unlike the previous sonata in which the extreme scordatura dictated that only 11 notes were sounded on the bottom string in the course of the whole piece, Biber is able to utilise the violin's whole compass as well as achieving a variety of different textures in each register, from chordal and polyphonic passages such as those heard at the opening (see example 3.23i) and at bar 31 of the Aria (see example 3.23ii), to fast linear passagework with large leaps between the different registers (see example 3.23iii).



Example 3.23i: Chordal writing in Præludium, bars 11-13, Sonata X.



Example 3.23ii: Polyphonic writing in Aria movement, bars 31-2, Sonata X.

The image shows a musical score for two violin parts. The top part is labeled 'Violin in scordatura' and the bottom part is labeled 'Violin at sounding pitch'. Both parts are in a single system and feature fast, intricate passagework with large intervallic leaps between registers. The notation includes many accidentals and complex rhythmic patterns.

Example 3.23iii: Fast passagework with large intervallic leaps between the registers in the Aria movement, bars 25-6, Sonata X.

The violin's retained responsiveness is also utilised to brilliant effect at the end of the piece, where Biber uses the top string as an upper pedal, sounded in demisemiquavers over a thematic voice moving in quavers on the string below (see example 3.24).

The image shows a musical score for two violin parts. The top part is labeled 'Violin in scordatura' and the bottom part is labeled 'Violin at sounding pitch'. The top part is annotated with 'Upper pedal' and the bottom part with 'Thematic voice'. Both parts feature fast, intricate passagework with large intervallic leaps between registers. The notation includes many accidentals and complex rhythmic patterns.

Example 3.24: Two voices in the Aria movement, Sonata X, bar 51-2.

In some of the *Mystery Sonatas*' previous scordaturas the raising of the lower strings, particularly to the extent that we saw in Sonatas VII and VIII, combined with a detuning of the top string, meant that the responsiveness and projection of the top string was catastrophically affected. In these tunings the kind of writing seen at bar 51 of Sonata X (see above) would be totally impracticable, as the top string would not respond quickly enough for the notes to sound. Again this brings us back to the issue of net gains and losses of tension and illustrates conclusively the fundamental symbiotic relationships between the pitches of all four individual strings, the tensions

and forces that these create upon the body of the instrument, and the production of tone, colour, and projection.

Another illustration of the way in which the mechanics of scordatura affect the tone quality and timbre that the violin produces is provided by the existence of a rearrangement of Sonata X, which has the title *The Victory of the Christians over the Turks*.³⁵ This version has an entirely different programme; the individual sections of the piece are headed with detailed pictorial titles describing how the Turks laid siege to Vienna, stormed the city, and were eventually defeated by a Christian army.³⁶ Beyond the re-titling of the sonata, the only significant difference is that the whole piece is transposed up a tone (to A minor), including the scordatura. This seemingly inconsequential alteration actually completely transforms the tone quality of the entire instrument, from the darkly muted tragic sound of the Crucifixion sonata, to the kind of over-stringing that we observed in pieces such as Sonata II.³⁷ In other words, changing the scordatura is shown to significantly alter the affect conveyed by the same music, and demonstrates once again that, for Biber and his contemporaries, the use of scordatura is fundamentally connected to the character and content of each *Mystery Sonata*.

The Glorious Mysteries

Sonata XI: The Resurrection – Scordatura: g g' d' d''

The scordatura used by Biber in this sonata has ensured that it has become his most notorious composition, sealing his reputation as a composer whose works display wild virtuosity and effect-laden devices. It has long been noted that, by crossing the middle two strings over in the pegbox and behind the bridge, Biber creates two cross symbols on the instrument (Holloway, 1994: 243). However, the full significance of this device, and the way in which it is bound up in the transmission of the sonata's

³⁵ The manuscript source for *The Victory of the Christians over the Turks* is to be found at the Minoritenkonvent in Vienna, where it is listed as being by Anton Schmelzer (1653-1701). Anton was the eldest son of Johann Heinrich Schmelzer (c. 1620-1680), whose *Sonatae unarum fidium* of 1664 were the first set of solo violin sonatas to be published by a non-Italian, and as such initiated the German style of violin writing of which Biber was to become the greatest exponent.

³⁶ The final section of this reworking is the only part of the piece not present in the original *Mystery Sonata*. It is not known whether this section is also by Biber or whether it was added by Schmelzer.

³⁷ It is unlikely that the transposition of the sonata and its scordatura upwards by a tone was due to any difference in performing pitch: at the time, both Vienna and Salzburg used a high chamber music pitch of around $a' = 465$ (Haynes, 2002: 103 and 150). Therefore, it seems certain that the transposition was for purely programmatic reasons.

(and indeed the whole set's) meaning, has yet to be fully realised, and is discussed further in chapter 4.

Perhaps due to the obvious symbolic nature of the scordatura in Sonata XI, it is also the case that the more practical sonic effects of the retuning have been all but ignored in writings about the piece. For instance James Clements is content merely to assert that this tuning is 'the most resonant' of all Biber's scordaturas³⁸ (Clements, 2002: 143). In fact, a closer examination of the way in which this utterly unique scordatura forces the strings to behave reveals that, although sympathetic resonance is once again an important factor, it is not the only issue at work here.

Through the lowering of the top string by a tone Biber once again lessens the crucially important tension on the soundpost/treble side of the instrument, creating the muting effect we have already noted in several previous sonatas. In the violin's middle register, as well as being symbolically significant, the crossing of the strings also has a distinct influence on the instrument's sound. As we have seen in the *Sorrowful Mysteries*, Biber was more than prepared to alter the pitches of the strings (sharper or flatter) to an extreme degree, and it is indeed possible to achieve the pitches required for Sonata XI without crossing the middle two strings over, by tuning the *d'* string up by a fourth and the *a'* string down by a fifth. However, although the pitches that this achieves are the same as Biber's prescribed method of crossing the strings over, the resulting qualities of tone, colour, responsiveness, power, and projection are completely different. If the strings are not crossed, and the middle two strings are retuned up and downwards to the extreme extent that would be required, the gains and losses of tension on the instrument become similarly extreme, like those observed in the *Sorrowful Mysteries*. The effect of raising the *d'* string by a fourth would essentially be to over-string it to the point where it becomes virtually unusable, producing a huge wall of inflexible sound very much like that seen on the bottom string in Sonatas VII and VIII. Conversely, lowering the *a'* string by as much as a fifth would ensure that the opposite effect was achieved, causing it to sound 'at best like a pair of braces' (Goebel, 2004: 6). If one tunes the violin in this way, rather than following Biber's instruction to cross the middle two strings over, the result is that they become utterly incompatible with the kind of polyphonic

³⁸ Eric Chafe uses this view of the scordatura's resonance, combined with the notated echo effects which occur throughout the sonata's opening passage, to apply the pictorial interpretation that Biber intends to evoke Christ's empty tomb (Chafe, 1987: 189).

chordal passages that Biber writes for them, as the massively raised third string would totally obliterate the even more massively lowered second string (see example 3.25).

Adagio

Violin in scordatura

Violin at sounding pitch



Example 3.25: Polyphony requiring equality of sound between the second and third strings in the closing Adagio, Sonata XI, bars 1-4.

However, by requiring the middle two strings to be crossed, Biber ensures that none of these catastrophic losses and gains of tension take place; he need only lower the A string by a tone and leave the *d'* string at its normal pitch. This means that, despite the apparently bizarre nature of the scordatura, the mechanical workings of the instrument have not been adversely affected to the point that any particular string is rendered unusable, and as such he is once again able to make use of the violin's entire range (see example 3.26).

The image displays a musical score for Example 3.26, consisting of three systems of music. The first system features two staves: the top staff is labeled 'Violin in scordatura' and the bottom staff is labeled 'Violin at sounding pitch'. Both staves show a melodic line with dynamic markings of 'piano' and 'forte'. The second system shows a piano accompaniment with two staves, also marked 'piano' and 'forte'. The third system continues the piano accompaniment with two staves, including rests and dynamic markings. The key signature is one sharp (F#) and the time signature is common time (C).

Example 3.26: Use of the violin’s range in the opening movement of Sonata XI, bars 6-11.

It is, then, readily apparent how James Clements arrives at his conclusion that the scordatura used in Sonata XI is among the *Mystery Sonatas*’ most resonant. However, the crossing over of the middle two strings actually ensures that the truth is somewhat more complex. The lengths of string between the violin’s tailpiece and bridge and in its pegbox contribute significantly to the sound that the instrument produces; by crossing the middle two strings over Biber effectively shortens this distance by stopping them at the point where they cross, due to the fact that one string lies on top of the other (see figure 3.3).

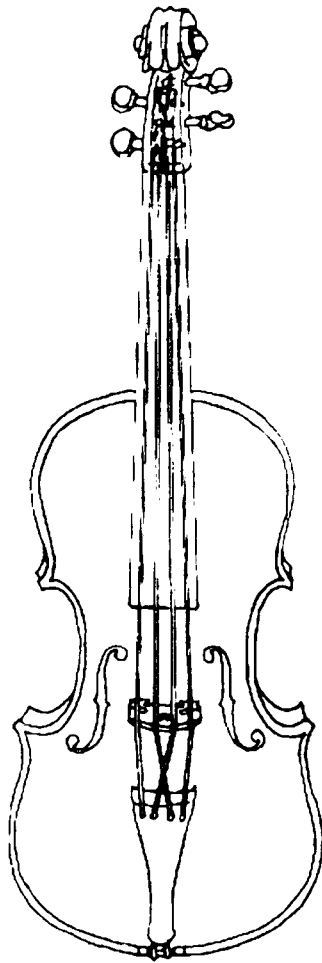


Figure 3.3: The crossing of the strings in Sonata XI.

Contrary to Clements's statement that the Resurrection tuning is the most resonant, this has the effect of preventing the middle two strings from resonating for as long as the outer two, and this in turn has two outcomes of which Biber is able to take advantage; first, by stopping the middle two strings from resonating, the sympathetic resonance of the outer two strings is made all the more noticeable, particularly on the top string, which audibly sounds a *d''* pedal while the other strings are being bowed during the opening movement. This complements the held *G* in the bass and effectively surrounds the whole sound with harmony. Secondly, the lack of resonance on the middle two strings enables Biber to make far more effective echoes in the passage from bar 18 in the opening movement (see example 3.27).

The image shows a musical score for two violin parts. The top staff is labeled 'Violin in scordatura' and the bottom staff is labeled 'Violin at sounding pitch'. Both staves are in treble clef and show a sequence of notes with dynamic markings: 'piano', 'forte', and 'piano'. The notes in the top staff are higher in pitch than the notes in the bottom staff, illustrating the scordatura effect.

Example 3.27: Echo effect created by the scordatura through lack of sympathetic resonance in the opening movement of Sonata XI, bars 18-19.

Here the *forte* melodic fragments are sounded on the freely resonating top string, while its *piano* echoes occur on the dulled second and third strings. Thus Biber effects the echoes through timbre as well as volume, and again it is the scordatura, employed as an expressive device rather than a virtuosic trick, which enables this.

Sonata XII: The Ascension – Scordatura: c' e' g' c''

With its second movement, entitled *Aria Tubicinum*, and the notation of the violin part in the alto clef used for the trumpet, this piece is one of only two examples in the *Mystery Sonatas* where Biber provides any written information to indicate that the music depicts a specific pictorial programme.³⁹ It is also the only point in the *Mystery Sonatas* where Biber specifies a particular instrument ('Solo Violone') for the basso part. James Clements has shown that Biber often employs trumpet fanfares with timpani, imitated in Sonata XII by the violin and violone, in his settings of the Credo at the words *et ascendit*, and how this instrumentation would have been 'a recognised symbol in seventeenth-century Salzburg for the Ascension' (Clements, 2002: 168). The symbolic link between sacred vocal music and narrative in the *Mystery Sonatas* at this point, and the role played by scordatura in its transmission to a knowing audience, is discussed further in chapter 4.

Returning to purely mechanical matters, it is notable and perhaps somewhat unexpected that the scordatura used in Sonata XII, a Glorious Mystery, is, outwardly at least, most closely related to the painfully extreme tunings seen in the Sorrowful Mysteries such as Sonatas VII and VIII. However, Biber's use of this equally extreme scordatura in the Ascension sonata differs greatly, particularly with regard to

³⁹ The only other example occurs in Sonata XI, bar 32 of which contains the words *Surrexit Christus hodie*, indicating the representation of a congregation singing a traditional Easter hymn depicted by the sounding of the melody on the violin in octaves. Biber employs this device in precisely the same way in his *Sonata à 6 die pauern - Kirchfartt genandt*.

the hugely over-strung bass end of the violin's range. In the programmatic and pictorial *Intrada* and *Aria Tubicinum*, in which the violin and violone imitate trumpets and drums respectively, Biber is aware that the violin's bottom two strings can easily overpower the top two, and as such separates the two registers so that the top two strings only function to sound melodic material, in the form of a trumpet duet. (see example 3.28). Mimicking the natural trumpet's lower register, the lower strings are so over-strung and responsive that their characteristic dynamic is almost invariably *forte*, with a very immediate and percussive tone quality. Biber emphasises this in these two sections by only ever sounding the bottom two strings as open strings,⁴⁰ taking advantage of their attack and long lasting resonance.

The image shows a musical score for Example 3.28, titled 'Trumpet and timpani imitation in *Aria Tubicinum*, Sonata XII, bars 3-7'. The score is divided into two systems. The first system consists of three staves: 'Violin in scordatura' (top), 'Violin at sounding pitch' (middle), and 'Solo Violone' (bottom). The second system consists of three staves: two treble clefs (top and middle) and one bass clef (bottom). Arrows labeled 'Trumpets' and 'Timpani' point to the first and second systems respectively. The music is in 3/4 time and features a mix of melodic and rhythmic patterns.

Example 3.28: Trumpet and timpani imitation in *Aria Tubicinum*, Sonata XII, bars 3-7.

Following this fanfare-like outburst, the dance movements which follow (Allamanda, Courente, and Double) are altogether more graceful in character. This is

⁴⁰ With the exception of bars 8-9, when a stopped sounding *g'* occurs on the third string in order to bolster the weaker sound of the open second string.

reflected in the way that Biber consciously avoids the violin's lower register, particularly the uncomfortably over-strung bottom string, even in passages that one might otherwise interpret as depicting more violent affects (see example 3.29).

The image displays two staves of musical notation. The upper staff is labeled 'Violin in scordatura' and the lower staff is labeled 'Violin at sounding pitch'. Both staves show a melodic line in 3/4 time with a key signature of one flat and one sharp (B-flat major/C minor). The scordatura staff shows a higher register melody compared to the sounding pitch staff.

Example 3.29: Seemingly violent affect in Double, Sonata XII, bars 5-8.

However, even here the timbres produced as a result of the scordatura, with its lightening of the treble register caused by the severe lessening of tension over the instrument's soundpost, give a graceful, airy quality to the sound, yet again informing the violinist as to the composer's musical intent.

Sonata XIII: The Descent of the Holy Ghost – Scordatura: a e' c# e''

As was the case in Sonata XII, the differentiation between the violin's bass and treble registers is also a crucial feature of the scordatura in Sonata XIII. Indeed, it is the only tuning in the *Mystery Sonatas* that widens the distance between the middle two strings (*e'* and *c#'*) to more than a fifth. This physical distance creates an extremely obvious timbral contrast between the two registers, and is immediately demonstrated by the repeat of the opening bass theme in the treble register at bar 4 (see example 3.30).

Theme in bass register

Theme in treble register

Example 3.30: Demonstrating contrasting timbres in Sonata XIII, bars 1-8.

As one would by now expect from a tuning in which the instrument achieves a significant gain in tension, the effect here is largely one of over-stringing. As a result there is a distinct increase in the violin's responsiveness, with the notes sounding immediately to the touch of the bow. This allows Biber to make much use of the higher register throughout the piece, in marked contrast to those sonatas (such as number III) in which a raising of the bass strings coincided with a lowering of the top string, thus rendering the treble comparatively weaker. One of the results of this increased responsiveness across the whole instrument is demonstrated in a remarkable passage, beginning at bar 44, which sees Biber writing increasing quantities of staccato notes to be played in one bow, with ever increasing rapidity (see example 3.31).

The image displays a musical score for two violin parts. The top staff is labeled 'Violin in scordatura' and the bottom staff is labeled 'Violin at sounding pitch'. Both staves show a series of up-bow staccatos, with the scordatura version exhibiting a tremulous tone quality. The score is in 3/4 time and features a complex rhythmic pattern of eighth and sixteenth notes.

Example 3.31: Up bow staccatos in opening movement of Sonata XIII, bars 44-51.

This bow stroke, which could be classed as virtuosic in that it requires an advanced bow technique, also produces a uniquely tremulous tone quality, which is impossible if each note is bowed separately. It is the fact that the scordatura renders the instrument so responsive to this kind of bowing which facilitates the projection of the passage's character.

Outwardly, then, the scordatura in Sonata XIII shares many characteristics with that in Sonata II (*a e' a' e''*), the *Mystery Sonatas'* very first over-strung tuning. However, the tone qualities produced by the instrument in these two sonatas is, in fact, very different; whereas Sonata II is characteristically open sounding with a rounded tone quality, Sonata XIII is distinctly strained, with a narrower more closed timbre. This can only be due to the tension of the second string, as it is the only difference between the two sonatas' tunings (*a'* in Sonata II, *c^z'* in Sonata XIII). As was the case with the bottom string in previous sonatas, Biber has here taken the

second string beyond its comfort zone. and the consequent over-stringing of the treble, even more so than the bass, gives the violin's tone in that register a penetrating laser-like quality which can be somewhat uncomfortable. Furthermore, by tuning the second string to a $c\#'$, Biber removes much of the sympathetic resonance produced by a more relaxed open a' string which is so crucial to the production of a warm tone on the highest string, effectively adding to the sense of strain. This is particularly important as the piece is actually in D minor and, although the violin is tuned to its dominant chord, this combination produces the least amount of sympathetic resonance in the home key since Sonata VI ($ab\ eb'\ g' d''$).

Once again, then, Biber shows himself to be fully in control of the potential variations of tone colour available to him through scordatura, producing utterly contrasting sounds and tone qualities with outwardly very similar tunings, through a comprehensive awareness of the violin's responses to the different tensions which the 15 'special' tunings impose upon it.

Sonata XIV: The Assumption of the Blessed Virgin – Scordatura: $a\ e'\ a' d''$

Following the experimental and extreme scordaturas seen in both the Sorrowful and Glorious Mysteries so far, Sonatas XIV and XV undertake a gradual process of relaxing the violin, moving away from the final painfully over-strung piece (Sonata XIII), towards the return of conventional tuning in the Passacaglia which closes the set.

In Sonata XIV the bottom two strings remain at the same pitches as the previous sonata (a and e') but, crucially, the top two strings are lowered (to a' and d''). This retuning takes us back to the kind of soundworld that we encountered in the Joyful Mysteries, the raising of the lower two strings by a tone giving a very responsive feel to the instrument, much like in Sonata II. However, mitigating against this is the simultaneous muting of the treble register caused by the lowering of the top string by a tone, and the consequent lessening of tension over the soundpost. This creates a particularly delicate, flute-like tone quality in the treble register which, while still able to project, has a characteristically graceful lightness. Biber takes full advantage of this in Sonata XIV's Aria, an extended ground bass dance of amiable character. For instance, the reducing of the intensity of the top string's tone can be seen to provide performers with insight into the kinds of

phrasing which they might employ. In bar 216 the rising figure to a (sounding) d''' might, on a conventionally tuned instrument, be played with a *crescendo* towards the top of the scale. However, as a result of the scordatura, the violin loses a considerable amount of power in this high register and, consequently, it is more natural to effect a *diminuendo* at this point (see example 3.32). In this way, the phrasing adds to the piece's graceful overall character.

Example 3.32: Phrasing implied by the scordatura in Sonata XIV, bars 215-17.

Biber also uses the scordatura's open strings in Sonata XIV to create rhythmic variety in the Aria's final Gigue section (beginning at bar 169). We have seen in Sonata XII how the open strings can be used to support a weaker unison note on an adjacent string, and the same device is also employed here in a playful manner, creating accents on unexpected beats of the bar (see example 3.33).

Example 3.33: Accents on beats 1 and 3 in Sonata XIII, bar 177.

This device is used most prominently at the very end of the piece, where the violin part stops suddenly and unexpectedly with a three-note chord on the third beat of the bar – a rhetorical figure known as *abruptio* – leaving the basso continuo to finish the piece alone (see example 3.34).

Example 3.34: *Abruptio* at the end of Sonata XIII, bars 234-40.

Sonata XV: The Coronation of the Blessed Virgin – Scordatura: g c' g' d''

The final *Mystery Sonata*'s scordatura continues the process of relaxing the instrument away from the over-strung tunings seen in previous sonatas. Indeed, this piece has the lowest overall tuning in the entire set – it is the only *Mystery Sonata* to lower the third string below its normal pitch of d' – and, as such, conveys the opposite affect to the earlier pieces' painfully charged scordaturas.

By now one would expect that, as a result of lowering the top string by a tone and not raising any of the other strings, Biber would create a darker more muted tone across the instrument. Indeed, a distinct softening of the violin's overall sound does occur. However, unlike Sonata X or the sixth 1681 sonata, Biber also lowers the second and third strings by a tone. This means that the top string's net loss of tension is, in fact, negligible and that, consequently, it does not lose any of its projection and power relative to the other strings. In other words, in the final scordatura Biber is able to achieve the relaxation in tone quality for which he is aiming, without altering the characteristic balance of the instrument as a whole. This, in turn, means that passages in demisemiquavers containing athletic intervallic leaps, such as those in bar 13 (see example 3.35) of the sonata's second movement, are still possible without requiring the performer to work against the instrument as would be the case if the top register had made a significant net loss of tension.

The image displays a musical score for Example 3.35. It consists of three systems of staves. The top system features two violin staves: the upper one is labeled 'Violin in scordatura' and the lower one 'Violin at sounding pitch'. Both violin staves show a series of intervallic leaps and fast passagework. The bottom system shows a piano accompaniment with two staves, featuring a complex rhythmic pattern of sixteenth and thirty-second notes.

Example 3.35: Intervallic leaps and fast passagework in the Aria movement of Sonata XV, bars 13-15.

All of this brings us back once more to the subject of Biber's high chamber music pitch of $a' = 465$. This almost totally ignored fact, while important for all of the *Mystery Sonatas'* scordaturas, is critical with regard to the way in which this final retuning functions. If the piece is performed at $a' = 415$, then the lowering of the top three strings to pitches a tone lower than is normal causes them to lose tension and all responsiveness. However, particularly on a Stainer violin which, as we have seen, was uniquely able to function equally well at low ($a' = 415$) and high ($a' = 465$) pitches, a performance at $a' = 465$ means that the instrument is here still operating within its comfort zone, despite the large overall net loss of tension on the bridge. This, in turn, means that the final sonata's closing passage of light, bell-like up bow staccatos⁴¹ (see example 3.36) is still very much achievable on what remains a responsive instrument, meaning that this beautifully delicate closing section loses none of its character.

⁴¹ This bowing pattern of one down bow followed a series of up bows is initially not clearly marked in the manuscript, with the slur occasionally seeming to include the first note in the bar. However, as the passage progresses, it becomes apparent that the slur is intended to correspond with the staccato dots, the first note being sounded on a separate bow.

The image shows two staves of musical notation. The top staff is labeled 'Violin in scordatura' and the bottom staff is labeled 'Violin at sounding pitch'. Both staves show a melodic line with staccato notes and a slur over the first two bars. The notation is in treble clef with a key signature of two sharps (F# and C#) and a 3/4 time signature. The notes are quarter notes, and the staccato effect is indicated by short stems and a slur over the first two bars.

Example 3.36: Delicate up bow staccatos in Sonata XV, Sarabanda, bars 17-18.

We can see that a detailed examination of the mechanics of scordatura reveals that the technique of retuning the strings plays a far more complex role in the production of sound in the *Mystery Sonatas* than has previously been accredited. It is not simply the case that Biber deploys scordatura to achieve sympathetic resonance: rather, through a thorough knowledge of the violin's machinery and the relationships between the four individual strings, he is able to create a unique soundworld for each sonata. The 15 scordaturas impact upon the mechanical workings of the violin in different ways; Biber's retunings create a broad and unusual palette of timbres and textures, which he is able to tailor to the subject of each rosary Mystery. In this way, scordatura is to be regarded as the language through which the narrative of the *Mystery Sonatas* is relayed to the audience, not just in sound, but physically, through the experiential nature of the mechanical changes taking place on the violin's body. Consequently, it is possible to view scordatura in the *Mystery Sonatas* as a specifically Jesuit device, in that it reflects exactly the approach to religious meditation advocated by Loyola in the *Spiritual Exercises*.

CHAPTER 4

The Encoding of Faith: Scordatura as Narrative

So far, we have seen how the mechanical alterations effected on the body of the violin have an impact on the nature of the sound that the instrument produces throughout the *Mystery Sonatas*. In other words, it is apparent that Biber uses the 15 different tunings in order to create an individual soundworld for each sonata in turn, within which the ‘meaning’ of the piece is to be understood. These soundworlds function to establish what James Clements calls each sonata’s *locus topicus* (Clements, 2002: 132), essentially setting the appropriate atmosphere for what is to come. However, only in the *Mystery Sonatas*’ two literal, pictorial passages – the depiction of unison hymn singing in Sonata XI and the representation of trumpet fanfares in Sonata XII – does Clements allow that scordatura is able to relay the specific ‘meaning’ of a piece, rather than its mood. He describes the choosing of Sonata XII’s *c’ e’ g’ c’’* tuning as being appropriate for the depiction of trumpets and therefore the Ascension, as a consequence of its creation of ‘increased resonance’⁴² (Clements, 2002: 132) and the fact that it causes the violin to sound in the trumpet key of C major. However, in sonatas where there are no such literal representations, such as Sonata VI (*ab eb’ g’ d’’*), he is only able to state that the scordatura’s role is to create an ‘eerie and unresponsive resonance on the violin’ (Clements, 2002: 132).

For Clements, then, it would seem to be the case that scordatura is only able to convey the specific ‘meaning’ of a piece if the subject is literal or pictorial, and as a result he limits his discussion of its role in the *Mystery Sonatas* to just over two pages of his thesis. Clements’s subsequent approach is an attempt to show how the more subtly conveyed specifics of the rosary narrative are related to the audience through the use of rhetorical figures. For instance, in Sonata XI, he identifies the prominent use of the ornamented *circulatio* figure during the opening movement (see example 4.1). He then cites the fact that this circular motive had long been associated with the sun as a source of life, as well as being an accepted symbol of Christ as the light of the world (Clements, 2002: 165-6).

⁴² We have seen that the issue of sympathetic resonance in the *Mystery Sonatas* is, in fact, more complex than this. For a full discussion see chapter 3.



Example 4.1: *Circulatio* figure in Sonata XI, bar 11.

This information, combined with the traditionally held belief that the Resurrection took place at sunrise, makes extremely apt the use of the figure at this point in the narrative. Similarly, Clements points out the use, at the opening of Sonata VI, of the figure *suspiratio* (see example 4.2), an expression of sighing through a rest which, combined with the predominance of falling melodic shapes, is very much in line with the piece's tragic, lamenting character (Clements, 2002: 150).



Example 4.2: *Suspiratio* figure in Sonata VI, bar 1-2.

However, despite these convincing examples, there are problems with Clements's approach. For instance, in his analysis of Sonata II, finding almost no relevant rhetorical figures, he is forced to conclude that the sonata's subject (the Visitation) is relatively unimportant in the rosary narrative, and that it therefore did not merit the comprehensive treatment that sonatas such as the Nativity receive (Clements, 2002: 138). Furthermore, Clements's identifying of rhetorical figures frequently leads him to impose inappropriate pictorial interpretations on the *Mystery Sonatas'* more abstract passages. For instance, he states that the repeated echo device employed by Biber at the end of Sonata VI (see example 4.3) is a depiction of the mountains and valleys around the Mount of Olives (Clements, 2002: 152).

The image shows a musical score for two violin parts. The top staff is labeled 'Violin in scordatura' and the bottom staff is labeled 'Violin at sounding pitch'. Both staves are in 8/12 time and feature a sequence of chords and notes. The first two measures are marked '(forte)' and the last two measures are marked 'piano'.

Example 4.3: Echo passage in Sonata VI, bars 100-102.

Similarly, he concludes that the disjunct writing between the high and low registers that we have already seen in the opening movement of Sonata II, is a representation of the unborn John the Baptist leaping in Elizabeth's womb at Mary's greeting of her cousin (Clements, 2002: 138) and that, in Sonata XIII, the use of the *circulatio* figure helps to depict the rushing wind of Pentecost. This is despite having already established the link between this figure and Jesus as the light of the world⁴³ (Clements, 2002: 170).

In much of his analysis of the *Mystery Sonatas*, then, Clements falls into the trap of using the symbolic rhetorical figures that he identifies to impose a literal, pictorial programme on each sonata. In this way he may, in fact, have been led by the undeniable presence of just such pictorial writing in Sonatas XI and XII, with their respective depictions of unison singing and trumpet fanfares. However, these two examples of literal representation are certainly not the norm in the *Mystery Sonatas*; indeed, as we have previously seen, Biber was one of the seventeenth century's greatest exponents of this kind of writing (see pieces such as *Battalia* and *Sonata representativa*), and, as such, one would expect any occurrences of it in the *Mystery Sonatas* to be as deliberately and unambiguously obvious as they are in his other works. Furthermore, the two incidences of pictorial writing in the *Mystery Sonatas* are indicated as such by Biber in writing, the hymn singing by the words *Surrexit Christus hodie* and the fanfares by the title *Aria Tubicinum*. These are, in fact, the only times that any written clue is given in the manuscript as to how the music specifically relates to its subject, and, as such, resemble Biber's other pictorial compositions; each movement of the *Sonata representativa* and *Battalia* is headed by a description of the literal events it depicts. The implication of this is that, where no

⁴³ A far more convincing interpretation at this point would surely be that the *circulatio* depicts the tongues of flame shown in the sonata's preceding engraving over the head of each apostle. This would at least be consistent with the figure's fire-related sun imagery established so convincingly by Clements in his analysis of Sonata XI.

written description occurs in the rest of the *Mystery Sonatas*, the imposition of such literal programmatic imagery is erroneous.

That Clements is aware of the pitfalls of such an approach to the music is apparent in his criticism of Davitt Moroney's application of the following passage from St. Luke's Gospel to Sonata III:

Sonata and Presto: And there were in the same country shepherds abiding in the field, keeping watch over their flock by night. And, lo, the angel of the Lord came upon them, and the glory of the Lord shone round them: and they were sore afraid.

Courente: And the angel said unto them, Fear not: for, behold, I bring you good tidings of great joy, which shall be to all people. For unto you is born this day in the city of David a Saviour, which is Christ the Lord.

Double: And suddenly there was with the angel a multitude of the heavenly host praising God, and saying, Glory to God in the highest, and on earth peace, good will to all men.

Adagio: And they came with haste and found Mary, and Joseph, and the babe lying in a manger... But Mary kept all these things, and pondered them in her heart. (cited in Clements, 2002: 120-1)

Moroney provides no context for the application of these events to the music, which are almost entirely at odds with the nature of the piece and its painfully over-strung scordatura, other than the fact that they share the same subject matter, the Nativity. As such, Clements's criticism is entirely justified. However, it is surely the case that the fundamental flaw here lies not with Moroney's lack of evidence, which Clements attempts to correct with his analysis of rhetorical figures, but with the idea that an imposition of literal events is necessary in the first place. Again, according to the evidence provided by other such works, if literal pictorialism were Biber's intention in the majority of the *Mystery Sonatas*, he would certainly have achieved it far more unambiguously, as he does in Sonatas XI and XII.

Approaching the *Mystery Sonatas* in this way, then, effectively reduces their purpose to that of a film soundtrack, with each sonata providing a chronological accompaniment to the events of the rosary narrative. This, in turn, denies the music alone the ability to carry the 'meaning' of its subject; just as a film soundtrack requires the pictures themselves in order to make real sense, so, according to this approach, the *Mystery Sonatas* would be ineffective without, for example, the rosary

paintings on the walls of the *Aula Academica* where they were possibly performed, sermons on the respective subjects of each Mystery, and the reciting of the rosary itself.

It is the case, then, that a more satisfactory solution to the riddle of the relationship between the subjects of each *Mystery Sonata*, as depicted in the preceding engravings, and the musical text is required. We have seen how the presentation of the *Mystery Sonatas* closely resembles that of Jesuit devotional literature such as Jerónimo Nadal's *Annotations and Meditations on the Gospels* and *emblemata*. The use of emblem, with its sometimes obscure, complex image-text relationships, is a regular feature of much Jesuit art.

Emblems were iconographic-verbal compositions that, by virtue of the special relationships and reciprocal qualification between word and image, involved complex operations of rhetoric and brought into play contents that were both moral and spiritual. The association between the image – the body – and the textual parts – the soul – was supposed to achieve a unity of meaning, which rendered the two elements of the emblem mutually penetrating and complementary. It was precisely this operation of putting the two parts into relation that constituted the foundation of emblematic language. (Filippi, 2006: 522)

In 'The Orator's Performance: Gesture, Word, and Image in Theatre at the Collegio Romano', Bruna Filippi has shown that the pervasive use of emblem's dense symbolism in Jesuit theatrical productions often led to the need for explanatory plot summaries to be distributed among the audience 'to facilitate their understanding and enjoyment of what was represented on stage' (Filippi, 2006: 516).

Emblem, then, made use of a non-literal, seemingly abstract language, based on symbolic metaphors and juxtapositions to relay its meaning. As such it required readers to possess an understanding of that language before they could interpret the moral or spiritual message therein. This feature of emblem led to its adoption in Jesuit colleges, at one of which Biber is likely to have been educated, as the perfect tool for the teaching of eloquence, whereby students would be given a subject and a particular form of imagery (such as fire), and be required to produce an emblem based on them. As detailed in the *Ratio Atque Institutio Studiorum*, the official plan for Jesuit education, the best emblems produced by the students would be posted on

the classroom walls of the college, and could then be chosen for presentation 'on some of the most important days of celebration' (Pavur, translated 2005: 111).

Unlike Nadal's *Annotations and Meditations on the Gospels*, which explain the imagery preceding the text through step by step guided meditations, the author of the emblem seeks to deliberately encode the subject, obscuring it from the reader. The process of decoding which then takes place has been perfectly summarised by Filippi:

To the deciphering ability or the erudite sensibility of the most expert [readers] was left the pleasure or the task of figuring out the key and identifying the hidden structures. The [reader's] enjoyment was all in the difficulty of discovering and therefore in the pleasure of resolving the refined riddles of composition – in 'recognising' the steps in the composition process and in retracing, in the opposite direction, the route travelled by the author... the discovery of what had been hidden, in what is unsaid, or in what is only sketched rather than fully drawn, was the soul of emblematic expression. (Filippi, 2006: 523)

Here, in the author's view, is the way to read the *Mystery Sonatas*. By regarding them as emblematic compositions which encode their message through the use of a complex metaphorical musical language, we can access the 'meaning' of each piece. Furthermore, in his written dedication to Maximilian Gandolf, Biber effectively tells us that this is the compositional method he has employed. By referring to his violin as a four-stringed lyre, Biber draws upon a rich history of lyre symbolism that would be familiar to an educated reader with a knowledge of emblematic metaphor. The lyre was the instrument of both Orpheus, musician to the gods, whose supreme musical eloquence had no rival, and Apollo, the Greek god of the sun, music, poetry, and prophecy. As such, it is often used in art as a symbol of harmony, order and reason, and the music of the spheres. Furthermore, there is a long tradition in art of associating Apollo with Christ; indeed, whereas Apollo could typify Christ, his lyre was regarded as being symbolic of the Crucifixion. It is for this reason that the title page of the first edition of 'one of the most ambitious and influential literary treatises of the Renaissance' (Borris, 2000: 26), Scaligero's *Poetices Libri Septum* (1561), shows the figure of Apollo treading his lyre underfoot, as a symbol of Christ's victory over death at the Resurrection. Similarly, there was a tradition in Byzantine art of depicting Christ sitting on a lyre-backed throne (see Breckenridge, 1980: 247-

260) which, Anthony Cutler has shown, derives from the image of Orpheus taming the beasts with his music (cited in Breckenridge, 1980: 247). The emblematic significance of this would again appear to lie in the representation of 'universal harmony, now under the dominion of Christ' (Breckenridge, 1980: 247).

Biber's description of his instrument as a four-stringed lyre, then, can actually be seen to have a dual purpose. First, he is flattering his patron (Maximilian Gandolph) with his eloquence, at the same time as promoting his own abilities as a musical orator; if Biber is a musical Orpheus then Maximilian is his god-like patron. This is borne out by the way in which, elsewhere in the dedication, Biber draws direct parallels between Maximilian and both Christ and Mary. Secondly, and much more importantly with regard to arriving at a method for the reading of the *Mystery Sonatas*, the deliberate use of the term 'lyre' to describe the violin establishes it as an instrument laden with emblematic significance, a suitable vehicle for the carrying of the symbolic meaning of the musical narrative. In this light the rest of Biber's description of his violin, where he informs us that it is 'tuned in 15 special ways', effectively tells us that it is the scordatura that provides the emblematic language through which the meaning carried by the violin is to be understood; it is the method by which Biber, the author, has encoded the message, and in order to decipher it we must understand the myriad ways that he is able to use the retunings as symbolic conveyors of the 'hidden structures' and 'refined riddles' (Filippi, 2006: 523) of the composition.

Symbolism and Literal Representation

We have already noted that Biber uses scordatura to achieve the only two examples of literal representation in the *Mystery Sonatas*. This is achieved by facilitating the playing of octaves to create the effect of unison singing in Sonata XI, and through the distribution of registers, as well as tuning to the appropriate key (C major), in order to imitate trumpet fanfares in Sonata XII. However, it is the case that, even in these apparently straightforward literal representations, the music is operating on a symbolic level which is very much related to the experiential approach to religious meditation advocated by Ignatius Loyola in the *Spiritual Exercises*. It is, in fact, perfectly possible to play all but five notes in the opening two movements of Sonata

XII on a conventionally tuned violin.⁴⁴ Doing this, though, would not enable the performance to carry the same emblematic significance. The tuning of the violin to *c' e' g' c''* effectively turns the instrument, symbolically speaking, into a trumpet, with the open strings corresponding to the harmonic series that the trumpet produces. In other words, as a result of the scordatura the violin becomes a symbolic trumpet, rather than merely imitating it; the trumpet is made physically present in the room. This philosophical difference between the same notes on a normally tuned instrument and a violin in scordatura is, essentially, akin to the difference between simile and metaphor, and is the same device that we have already seen used in art, whereby a painting of the god Apollo becomes a metaphorical representation of Christ. Another example of this use of metaphor in art can be seen in Giovanni Battista Tiepolo's *Madonna of the Goldfinch*. According to George Ferguson:

The goldfinch is fond of eating thistles and thorns, and since all thorny plants have been accepted as an allusion to Christ's crown of thorns, the goldfinch has become an accepted symbol of the Passion of Christ. In this sense, it frequently appears with the Christ Child, showing the close connection between the Incarnation and the Passion. (cited in Geiringer, 1956: 9)

The use of musical metaphor is, then, the reason for Biber's notation of the violin part in the alto clef during the first two movements of Sonata XII. The alto clef is not a feature of violin music, but was used for trumpet writing and again shows that, in these movements, the performer is not reading a piece of violin music which sounds like a piece for trumpets, but that they are actually reading a piece of trumpet music. Symbolically speaking, as a result of Biber's unique and original use of scordatura, both the performer and the audience are made to physically experience the affect of the first two movements of Sonata XII in a way that exactly reflects the kind of experiential meditative approach prescribed by Loyola in the *Spiritual Exercises*.

We have previously seen how Loyola, in the *Spiritual Exercises*, recommends that the exercitant should become familiar with every single detail of the scene upon which they are meditating, in order that they experience the events fully. This idea is also taken up by Nadal; in the *Annotations and Meditations on the*

⁴⁴ All five of these - g's - are inner notes, part of four-note C major chords. It would, admittedly, be more technically demanding to play these movements on a conventionally tuned violin. However, even this difficulty would not approach the level of technical ability required to play Biber's *Sonata Violino Solo* (1681).

Gospels the engravings which accompany the text contain labelled reference points, which are contemplated sequentially in order to guide the worshipper methodically through the scene that they are to experience (see figure 4.1).

ASCENSIO CHRISTI IN COELVM.

148

Mar. xvi. Luc. xxiiij. Ioan. xxi. Act. i.

cxxvi



A. Intelligitur peruenisse ad verticem montis oliueti cum caelesti cœtu.
 B. Hinc, cum omnium in se oculos, animosq; conuersos cerneret, benedicens eis ascendit in caelum.
 C. Splendidissima exceptus nube ab oculis eorum eripitur, pompæ Angelorum et animarum coniungunt sese plurimi Angeli e caelo, qui

iubilo, & voce tubæ venientem excipiunt.
 D. Apostolis intuentibus euntem in caelum.
 E. Duo Angeli candida veste insignes præmon-
 ciant Christum pari maiestate, et gloria
 ad iudicium vniuersale esse venturum.
 F. Redeunt domum, & sunt assidue in tem-
 plo, laudantes & benedicentes Deum,
 quod non potuit exprimere imago.

Figure 4.1: 'The Ascension' from Nadal's *Annotations and Meditations on the Gospels*.

The descriptions which accompany each of these reference points on the Ascension engraving read as follows:

A: Christ and His holy entourage at the top of Mt. Olivet.

B: When Christ saw that all had their eyes and hearts fixed on Him. He blessed them, and from there ascended into heaven.

C: Christ is taken up on a majestic cloud and removed from their sight. Countless angels from heaven join the host of angels and holy souls to receive Him with a jubilant blare of trumpets.

D: The apostles see Christ ascend to heaven.

E: Two distinguished angels vested in white proclaim that Christ will return in like majesty and glory to judge the whole world.

F: The apostles return home, and visit the Temple daily to praise and bless God. (The figure could not show this.) (Nadal, 1595: 151)

From this it can be seen that trumpet fanfares form only one aspect of the experience of the Ascension Mystery. If, as seems most likely, Biber was educated at a Jesuit college, he would certainly have been familiar with Nadal's *Annotations*. The circumstantial evidence clearly points to this as the method used in Sonata XII; concentrating on one detail of the Ascension narrative in the sonata's opening two movements is clearly redolent of Nadal's text.

As well as fulfilling Loyola's requirement that the audience be made to physically experience the literal events described in Nadal's *Annotations*, the use of and tuning to the key of C major can be seen to have a more obscure, symbolic significance. As Christoph Wolff has shown in his examination of J.S. Bach's canon *Trias harmonica* BWV 1072, the key of C major had a traditional and symbolic association with the Trinity:

Whether produced by the proper numerical division of the octave, by the natural harmonic series (as created, for example by a trumpet in C), or by just intonation... the C major triad [is] the acoustically purest of all triads, which represents the natural, God-given, most perfect harmonic sound... The C major triad... is the only truly perfect chordal harmony... Like no other combination of tones, the natural triad could make audible and believable the *trias perfectionis et similitudinis* (the triad of perfection and [God-] likeness), the abstract "image of divine perfection". (Wolff, 2001: 336-8)

In Sonata XII, which is the only piece thus far in the set to be in C major, the use of the trumpet does, then, have a further emblematic significance; it is representative of the re-establishment of the state of divine perfection in heaven, the Trinity of Father, Son and Holy Ghost, as a result of the Ascension. However, as we have seen, it would be perfectly possible to perform this representation in C major without retuning the violin. It is, though, by tuning the strings to the C major chord that the ‘image of divine perfection’ (Wolff, 2001: 338) which it represents is actually experienced by those that hear the piece. Again, then, Loyola’s requirement in the *Spiritual Exercises* that the exercitant experience events as if they were themselves present is fulfilled, and it is the emblematic language of Biber’s scordatura that allows this to be so.

Emblematic Language and Musical Gesture

We have seen how the emblematic use of scordatura enables Biber to encode the symbolic meaning of the rosary narrative in sonatas containing examples of literal representation. It is, however, the case that this style of writing makes up a very small proportion of the music in the *Mystery Sonatas*. Consequently, the remainder of this thesis will concentrate on how Biber achieves the same encoding of the ‘riddles of composition’ (Filippi, 2006: 523) in the seemingly more abstract parts of the pieces.

It has long been established that the music of J.S. Bach contains layer upon layer of symbolic associations between the sounds of the music itself and the composer’s own religious and philosophical beliefs, an example of which we have already seen in Christoph Wolff’s writing on the canon *Trias harmonica*. One of the most prevalent of these associations is the sign of the Cross or *chiasmus*, which is ‘symbolic of both Christ and the Cross’ (Geiringer, 1956: 5). This figure consists of musical notation that visually or sonically evokes the Greek letter χ and/or the Z shape associated with the German *Kreuz*, which can signify both sharps (as in f^{\sharp}) or the Cross. Bach is able to achieve the figure’s symbolic meaning through the use of a number of different motives, perhaps the most famous of which is the musical notation of his own name (see figure 4.2).

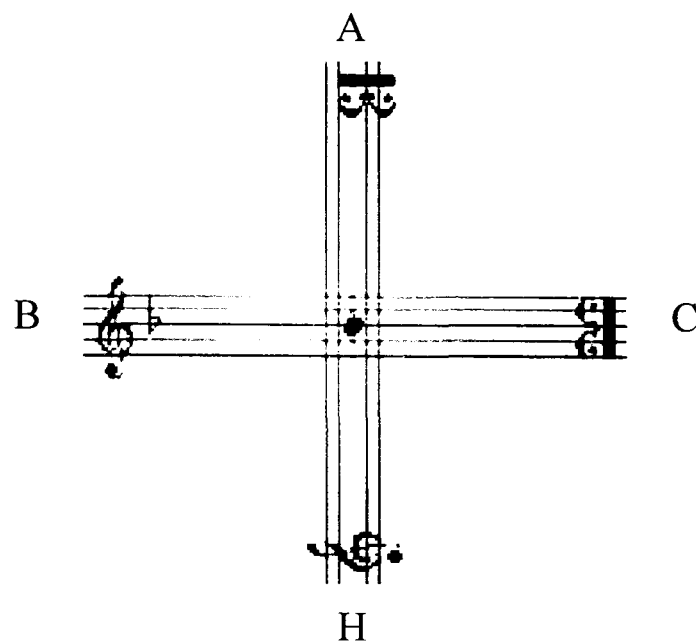


Figure 4.2: B-A-C-H as a *chiasmus*.

It is also the case that, when Bach's name is notated horizontally, the resulting melody simultaneously forms the overlapping zigzag shape associated with the *Kreuz* figure and the Cross shape associated with the Greek letter χ . It is in this form that Bach uses the motive at the apex of the final movement in *The Art of Fugue* (see example 4.4), effectively using the Cross gesture created by his own name as an emblematic personal expression of his philosophical approach to the perfect nature of counterpoint, and the way in which it reflects divine harmony, 'the essential identity between the Creator and the universe' (Wolff, 2001: 338).



Example 4.4: B-A-C-H as a *chiasmus* in movement 18 from the *Art of Fugue*, bars 193-205.

The use of the Cross figure in the aria ‘Gebt mir meinen Jesum wieder’ from the *St. Matthew Passion*, this time resembling the Greek letter χ ‘consisting of a diagonally descending line and a horizontal one’ (Geiringer, 1956: 4-5), has also been cited by Karl Geiringer (see example 4.5). The virtuosic repeated soundings of the *chiasmus* in the solo violin part at this point in the drama represent ‘the vision of Christ crucified which the repentant betrayer [Judas] cannot shake off’ (Geiringer, 1956: 5).



Example 4.5: Cross figures in the solo violin part of ‘Gebt mir meinen Jesum wieder’ from the *St. Matthew Passion*.

Similarly, Anthony Newman has demonstrated Bach’s use of Cross figures in the organ chorale *Christ lag in Todesbanden* (Newman, 1995: 191, see example 4.6).



Example 4.6: Cross figures in the organ chorale *Christ lag in Todesbanden*.

Thus it can be seen that the Cross gesture of the *chiasmus* figure is a key aspect of Bach's melodic vocabulary. However, it is also the case that it informs his textural and rhythmic thinking, effectively forming a complete musical language loaded with emblematic symbolism. For instance, in the duet aria 'So ist mein Jesus nun gefangen' from the *St. Matthew Passion*, Bach deliberately arranges the entry of the second choir at bar 21 in order to form a Cross shape both on the page and in sound, with a horizontal, linear musical line (choir 1) intersected by vertical chords (choir 2, see example 4.7). Bach uses exactly the same device at bar 17 in the opening chorus of the *St. John Passion* and at the entry of the second choir at bar 26 in the opening chorus of the *St. Mathew Passion*; indeed, in the autograph score of the *St. Matthew Passion*, the vertical entry by the second choir is placed in the middle of the page, forming an easily discernable visual Cross for anyone with access to the score. This technique of employing a visual metaphor for the aural effect created by the scoring is essentially the same as that used by Biber in the *Mystery Sonatas*, when he notates the violin part in the alto clef to signify the representation of the trumpet in Sonata XII.

The image shows a page of a musical score for the St. Matthew Passion. It includes staves for Flutes I and II, Oboe, Violins, Viola, Soprano, Alto, Tenor, Bass, and Bassoon. The lyrics are: "Je - sus nun ge - fan - Lasst ihn, hal - tet, bin - det nicht!".

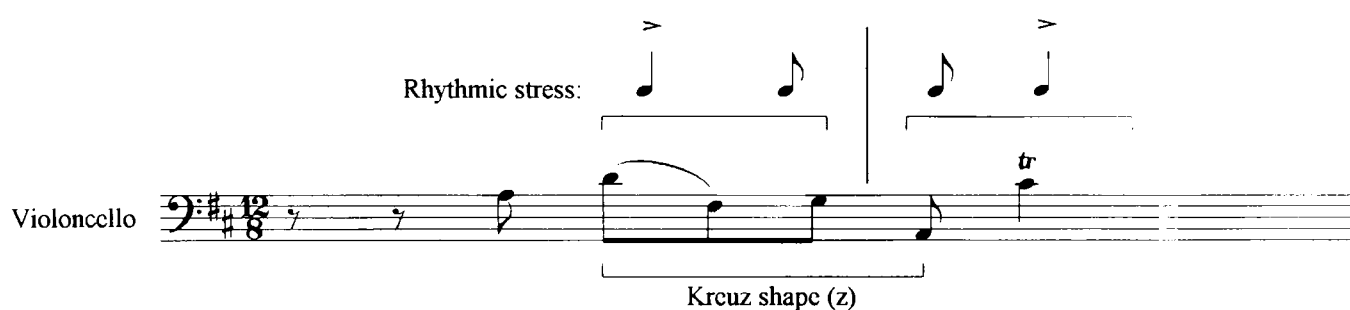
Example 4.7: Cross figure created by the entry of choir 2 in ‘So ist mein Jesus nun gefangen’ from the *St. Matthew Passion*.

The original literary definition of the *chiasmus* figure is that it ‘consists in the specular or “mirrorlike” distribution of pairs of elements formally and functionally

equivalent' (Mayoral, 2001: 89). In other words, it is a symmetrical repetition of ideas in inverted order, with the structure *ABBA*:

Polish'd in courts, and harden'd in the field
 Renown'd for conquest, and in council skill'd. (cited in Lantham, 1969: 23)

In the aria 'Mein teurer Heiland' from the *St. John Passion*, Bach also makes use of this version of the figure in rhythmic form. Here, the slurs and the dissonance caused by the trills in the solo cello part serve to make the rhythmic stress of beat three a mirror of that on beat two (see example 4.8).



Example 4.8: Rhythmic and melodic *chiasmus* in 'Mein teurer Heiland' from the *St. John Passion*.

That this is absolutely deliberate is made all the more obvious by the Cross shape of the melodic figure itself, its subsequent setting to the word *Kreuz* in bar 8, and the movement's subject matter; the first two lines of the chorale which punctuates the phrases sung by the solo bass are essentially chiastic.

Jesus, you were dead
 And now live for ever.

In the words of Wilfrid Mellers, Bach is thus 'the supreme composer of the Christian Cross' (Mellers, 1980: 9). However, his use of this symbolism is not without precedent; in fact, chiastic imagery can be seen to be just as pervasive a feature of Biber's compositional language throughout the *Mystery Sonatas*. Indeed, the very first bar of the very first *Mystery Sonata* declaims an obvious and strident musical Cross much akin to that cited by Newman in Bach's organ chorale *Christ lag in Todesbanden*, with its descending figure followed by an octave leap⁴⁵ (see example 4.9).

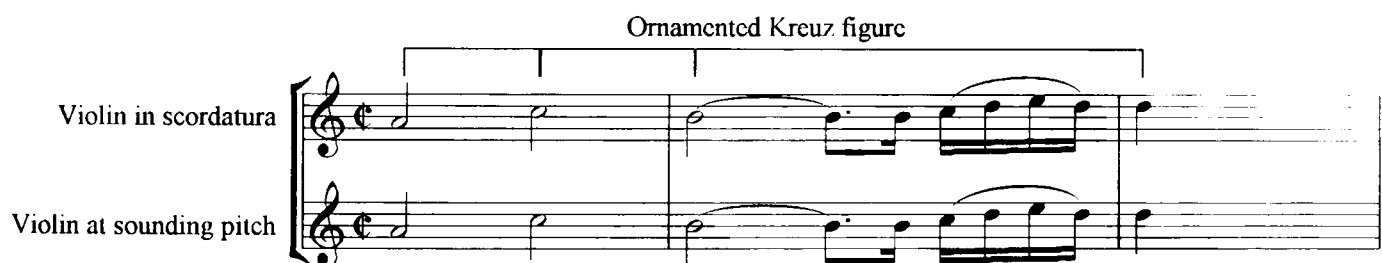
⁴⁵ Identifying a musical motive as being representative of the Cross in this way can be a somewhat subjective exercise. However, as has been shown in the study of the *Kreuz* in the music of J.S. Bach,



Example 4.9: *Kreuz* figure in Sonata I, bar 1.

In light of these pieces' purpose to serve as musical-metaphorical representations of both the rosary narrative and the physical experience involved in the saying of the associated prayers, the figure at this point can be seen as a representation of the traditional making of the sign of the Cross on one's torso and head before the commencement of the first prayer. Simultaneously, the *chiasmus* here serves to reveal, symbolically, the central role to be played by the Cross as a symbol of victory over death in the narrative to come, effectively playing the part of a rhetorical *exordium*, wherein the entire meaning and purpose of the ensuing discourse is encapsulated (Mattheson, 1739: 470).

By the same method as used in Sonata I, Biber opens Sonatas IX, X, and XI, the three specifically Cross related Mysteries of the rosary, with similar chiasmic musical gestures (see examples 4.10i, 4.10ii, and 4.10iii).



Example 4.10i: Ornamented *Kreuz* figure at the opening of Sonata IX, bars 1-3.



Example 4.10ii: *Kreuz* figure at the opening of Sonata X, bars 1-2.

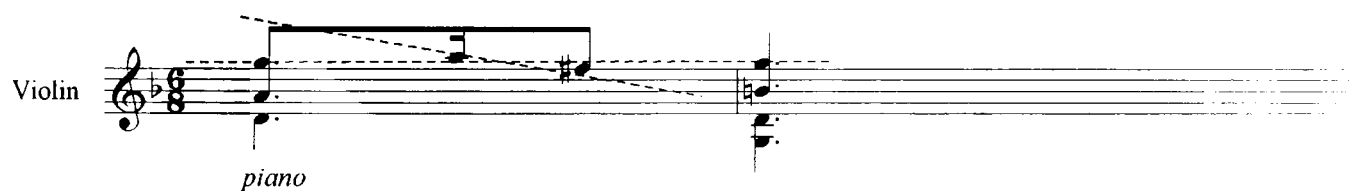
the religious subject of certain works creates a context in which these figures can be understood. In the *Mystery Sonatas*, the religious subject is the rosary, one of the central themes of which is the crucifixion. In this context, this thesis will aim to show that chiasmic imagery pervades every level of the composition, from melody to structure.



Example 4.10iii: Ornamented *Kreuz* figure at the opening of Sonata XI. bars 1-2.

Significantly, it is again the case that these Cross gestures are the very first sounds to be heard in the respective sonatas; they are effectively announcing, through the use of metaphorical musical gesture, the all-pervasive subject matter of what is literally the crux of the rosary narrative. It is the Cross which is the symbol of Christ's death and which, at the Resurrection, becomes a symbol of his victory over that death, and of the promise of redemption.

It is, then, in this way that Biber's treatment of the end of the unaccompanied Passacaglia, the sixteenth and final work in the set, is to be understood (see example 4.11).



Example 4.11: *Chiasmus* at the end of the Passacaglia, bars 130-1.

Unlike the sonatas discussed above, the *chiasmus* fragment with which the piece closes has already occurred at various points in the preceding bars, as part of more extended phrases. However, by separating and isolating the cadential figure and its associated Cross shape, Biber effectively clarifies its meaning and, as such, provides a closing counterpart to the sign of the Cross with which the *Mystery Sonatas* opened.

We have, then, established that musical-metaphorical Cross gestures, in the manner that Bach would use them approximately 50 years later, are a significant feature of Biber's emblematic 'riddles of composition' (Filippi, 2006: 523) throughout the *Mystery Sonatas*. However, unlike Bach, who never employed

scordatura in his solo violin writing,⁴⁶ Biber's 15 'special' tunings can be seen to add yet another layer to this chiastic mode of thought, that of physical gesture.

The ability of physical gesture to move the passions of an audience was a common conceit of early Classical rhetorical texts. For instance, in *Institutio oratoria*, Quintilian writes,

The importance of Gesture for an orator is evident from the simple fact that it can often convey meaning even without the help of words. Not only hands but nods show our intentions; for the dumb, indeed, these take the place of language... As for the hands, without which the Delivery would be crippled and enfeebled, it is almost impossible to say how many movements they possess, for these almost match the entire stock of words. Other parts of the body assist the speaker: the hands. I might almost say, speak for themselves. Do we not use them to demand and promise, summon and dismiss, threaten and beg, show horror and fear, inquire and deny, and also to indicate joy, sadness, doubt, confession, remorse, or again size, quantity, number, and time? Do they not excite, restrain, approve, admire, display shame? Do they not serve instead of adverbs and pronouns when we need to point out places or persons? Amid all the linguistic diversity of the peoples and nations of the world, this, it seems to me, is the common language of the human race. (Quintilian, XI.iii.65-87)

That this Classical view of the affective and demonstrative nature of physical gesture was reflected in later Renaissance and Baroque thought is shown by Francis Bacon, writing in 1605:

For Aristotle hath very ingeniously and diligently handled the factures of the body, but not the gestures of the body, which are no less comprehensible by art, and of greater use and advantage. For the lineaments of the body do disclose the disposition and inclination of the mind in general. but the motions of the countenance do not only so, but do further disclose the present humour and state of mind and will. For as

⁴⁶ A violin in scordatura does appear in the Sonata for flute, violin and basso continuo (BWV 1038). However, this sonata is related to BWV 1021 (which does not use scordatura) and is thought to be a version by one of Bach's pupils. Scordatura does appear in the fifth Cello Suite, where Bach requires the top string to be detuned by a tone.

your Majesty saith most aptly and elegantly, *As the tongue speaketh to the ear, so the gesture speaketh to the eye.* (cited in Cleary, 1974: xiii)

This very passage from Bacon's *Advancement of Learning* was a direct influence on another English writer, John Bulwer, who in 1644 published *Chirologia, or the Naturall language of the Hand: Chironomia, or the Art of Manuall Rhetoricke*. 'a thorough and systematic treatise on the movements of hands and fingers, first, in relation to natural significations, and then in relation to artistic usage in public address' (Cleary, 1974: ix). This treatise effectively presents a dictionary of gestures and their associated rhetorical meanings for the hands only, and shows conclusively the extent to which visual physical gesture was seen to be the equal of sonic gesture.

Taking her lead from texts such as these, Colette Henshaw, in her thesis *Gesture and Affekt in the Performance of Baroque Vocal Music with Specific Reference to English Baroque Mad Songs* (2000), has shown that the singer's choosing of the appropriate physical gestures of the face and body was an essential aspect of the performance of Baroque vocal music. Her method of identifying and analysing 30 musical-rhetorical figures which are then 'correlated with their equivalent gestural figures' (Henshaw, 2000: ii), demonstrates the onus that was placed on the performer's interpretative ability and subsequent choosing of the appropriate gestures in order to move the audience.

In the *Mystery Sonatas*, however, a somewhat different process is at work. Rather than being left to the performer's discretion, the physical-gestural content of the works is very much part of the compositional process, and is indelibly linked to Biber's use of scordatura.

We now return to the *Mystery Sonatas* and Biber's most notorious scordatura, that in Sonata XI (the Resurrection). In this piece, as we have seen, Biber detunes the violin's top two strings and then crosses the second and third strings over each other, creating a visual Cross at each end of the violin, in line with the musical Cross imagery employed in the work's opening thematic statement. This is a fantastically affective visual device, but one which has an associated problem; in a seminar given by the author, none of the members of the audience could see the crossed strings when the violin was held in the playing position and, as a result, the instrument had to be passed around the room. It seems unlikely that knowledge of such a flamboyant compositional conceit was intended to remain with Biber and God

alone, and it is only when one examines the physical gestures that arise as a result of the scordatura that the tuning's true significance becomes apparent.

We have already seen how the opening four bars of Sonata XI are an ornamented version of the *Kreuz* figure heard at the opening of Sonata X. However, the scordatura's crossing of the middle two strings makes this aural metaphor manifest as a physical gesture, made by the performer's bow arm over the course of the first four bars (see example 4.12). This is achieved through the way that the crossed strings dictate that the order of the strings bowed in the first four bars is as follows:

The image shows two staves of musical notation. The top staff is labeled 'Violin in scordatura' and the bottom staff is labeled 'Violin at sounding pitch'. Both staves show four bars of music. Brackets above the staves indicate the string order: '1st and 3rd strings' for the first two bars and '2nd and 4th strings' for the last two bars. The notation includes various note values and rests, illustrating the physical gesture of crossing strings.

Example 4.12: Physical Cross gesture at the opening of Sonata XI, bars 1-4.

This interlocking pattern – 1st string, 3rd string, 2nd string, 4th string – effectively translates the zigzag shape of the *Kreuz* figure into a physical-gestural form, and is therefore able to announce the sonata's subject matter visibly to a large initiated audience.

Following the opening four-bar physicalisation of the sign of the Cross, bars 4-13 are subsequently crammed full of this chiastic emblematic physical and aural symbolism. First, bars 4-6 present a shortened two bar version of the physical Cross gesture (see example 4.13).

The image shows two staves of musical notation. The top staff is labeled 'Violin in scordatura' and the bottom staff is labeled 'Violin at sounding pitch'. Both staves show six bars of music. Brackets above the staves indicate the string order: '1st and 3rd strings' for the first two bars and '2nd and 4th strings' for the last two bars. The notation includes various note values and rests, illustrating the physical gesture of crossing strings.

Example 4.13: Physical Cross gesture in bars 4-6, Sonata XI.

Secondly, with the commencement of falling semiquavers in bars 6-8, the same gestural pattern – 1st string, 3rd string, 2nd string, 4th string – is twice played out (see

example 4.14). Here, the affective nature of the physical gesture is made even more obvious as the performer is required to make the leap across three strings quickly, even though the aural effect is merely the sounding of a descending scale.

The image shows a musical score for two violin parts. The top staff is labeled 'Violin in scordatura' and the bottom staff is 'Violin at sounding pitch'. Above the top staff, a bracket labeled 'String:' spans across the first four measures, with sub-brackets indicating the strings used: 1st, 3rd, 2nd, and 4th. The music consists of a descending scale of eighth notes. The dynamic marking 'piano' is present in both staves.

Example 4.14: Physical Cross gestures in bars 6-8, Sonata XI.

Next, from the third beat of bar 8, the falling semiquavers are played as if a descending scale is to be heard (see example 4.15). This has the opposite effect of the previous two bars, in which the physical Cross gesture was isolated and presented; now it is the turn of its aural equivalent.

The image shows a musical score for two violin parts. The top staff is labeled 'Violin in scordatura' and the bottom staff is 'Violin at sounding pitch'. The music consists of a descending scale of eighth notes. The dynamic marking 'forte' is present in the first measure of both staves, and 'piano' is present in the second measure. A bracket at the bottom of the score spans across the first four measures and is labeled 'Sounding interlocking pattern'.

Example 4.15: Aural equivalent of physical Cross gesture. Sonata XI, bars 8-10.

Finally, bars 12 and 13 take the *circulatio* figure noted by Clements and extend it, introducing, in bar 12, a syncopated figure which sounds on the first and third strings, with accents provided by the open top string. Bar 13 then completes the *Kreuz* by sounding the same figure an octave lower on the second and fourth strings (see example 4.16).

The image displays two systems of musical notation. The first system is labeled '1st and 3rd strings' and contains two staves: 'Violin in scordatura' (top) and 'Violin at sounding pitch' (bottom). The second system is labeled '2nd and 4th strings' and contains two staves. All staves show rhythmic patterns with slurs and accents, characteristic of Baroque string writing.

Example 4.16: Physical Cross gestures in bars 12-13, Sonata XI.

Chiastic gesture is, then, an all-pervasive aspect of the opening of Sonata XI, reflecting the Cross as a symbol of Christ's power victory death at the Resurrection. More than this, though, Biber's employment of the affective nature of physical gesture yet again fulfils Loyola's requirement that the worshipper should actually experience the events upon which they are meditating. By creating, through the emblematic use of scordatura, the sign of the Cross, physically making it present in the room where the *Mystery Sonatas* are performed, Biber ensures that his audience can see events as if they themselves were present. In the author's opinion, this is the true meaning of Biber's reference to his violin in the dedication as a 'four-stringed lyre'. As we have seen, the lyre was a traditional symbol of the Crucifixion, and Biber, through his use of scordatura, presents on that symbol of the Cross, physical and aural chiastic symbols, reinforcing at every level the meaning of the musical narrative.

The sheer volume of metaphorical symbolism in the opening section of Sonata XI may, in fact, be due to the way in which the Church, and in particularly the Jesuits, approached the events of the Resurrection narrative. It is the case that the Gospels do not actually report what is believed to have occurred at the Resurrection, 'it is ascertained at second hand – disclosed by angels, deduced from relics such as the shroud and veil, and discerned by faith in these tokens' (Melion, 2005: 7). As a consequence of this, the engraving which precedes Nadal's text on the Resurrection

is more allegorical in nature than the majority of those in his *Annotations and Meditations on the Gospels* (see figure 4.3).



Figure 4.3: ‘The Resurrection’ from Nadal’s *Annotations and Meditations on the Gospels*.

As can be seen in figure 4.3, the image is divided horizontally into two halves. In the top half is the figure of the risen Christ brandishing the Cross in triumph. who:

Having united His soul to His body, emerged from the tomb, and declared His eternal triumph over death, the devil, and the world... is thronged by angels and the souls of the Fathers. (Melion, 2005: 7-8)

The likelihood that Biber was educated at a Jesuit college, along with the circumstantial evidence provided by the emblematic language of the *Mystery Sonatas*, make it a near certainty that he was familiar with Nadal's *Annotations and Meditations on the Gospels*, and again it seems possible that Nadal's text provided a model for the nature of the symbolism in Sonata XI. We have previously seen how the sonata's remarkable scordatura serves to facilitate the echo passage at bar 18 by damping the middle two strings, and allowing the top string to resonate (see chapter 3). It is these echoes that Chafe interprets as a representation of the resonance of the empty tomb at the Resurrection (Chafe, 1987: 189); however, the passage's true significance would appear to lie in the allegorical nature of the physical gestures which occur as a result of the crossing of the strings, and their associated chiastic references. Much like the Resurrection engraving in Nadal's *Annotations*, the scordatura in Sonata XI causes the horizontal division of the musical imagery, effectively creating a chiastic mirror, in that all of the lower octave echoes in bars 18-23 require the performer to bow upside down, moving 'up' to the adjacent string in order to achieve the sounding of a lower note, whereas the higher *forte* fragments are bowed 'as normal' (see example 4.17).

The image shows two staves of musical notation for violin. The top staff is labeled 'Violin in scordatura' and the bottom staff is labeled 'Violin at sounding pitch'. Both staves show a sequence of notes with dynamic markings: *piano*, *forte*, and *piano*. Above the top staff, there are four brackets indicating bowing directions: 'Normal' (covering the first two notes), 'Upside down' (covering the next two notes), 'Normal' (covering the next two notes), and 'Upside down' (covering the final two notes). The notation includes stems, beams, and slurs, with some notes marked with a 'z' symbol.

Example 4.17: Mirrorlike chiastic gestures in bars 18-19, Sonata XI.

The similarity between this passage and the engraving in Nadal's *Annotations* is, consequently, made doubly clear by the relative amounts of sympathetic resonance

that the *forte* and *piano* figures provide. As a result of the damping effect caused by the crossing of the strings, the tone quality of the echoes is effectively ‘darkened’ with a lack of resonance, while the *forte* motives occur on the freely resonating top string which, like the top half of Nadal’s engraving, is ‘suffused with light’ (Melion, 2005: 8).

Non-Specific Gesture

We have seen how specifically chiastic musical and physical gestures occasioned by the scordaturas serve to create an experiential aspect to the *Mystery Sonatas*, reinforcing the meditative focus on the Cross throughout the rosary narrative. Walter Melion has shown how the use of allegorical imagery in Nadal’s engraving of the Resurrection and its accompanying text, with its focus on the visible – light and dark, high and low, those who have witnessed the Resurrection and those who are oblivious to it – concentrates exclusively on the ‘act of beholding’ (Melion, 2005: 9) in order to discern the message therein. Indeed, he states that,

By suggesting the relation between the mysteries [of the Resurrection] functions as a kind of image, he [Nadal] once again emphasises that our access to the Resurrection is mediated by imagery. (Melion, 2005: 9)

In other words, Nadal tells us that, in very basic terms, ‘seeing is believing’, with the caveat that, in the *Annotations* as in the *Mystery Sonatas*, the initiated audience must decipher and interpret what they see in order to understand its mystical complexities.

As we have already observed in Sonata XI, where the performer is required to bow upside down at bar 18, scordatura fundamentally changes the relationship between the instrument and the bow. This can, as much critical writing on scordatura infers, be used as a virtuosic device in order to make otherwise impossible passages playable. Conversely, however, scordatura can also be used to make certain passages more difficult. For instance, in Sonata VII (the Scourging – scordatura *c' f' a' c''*) the reduced compass of the open strings means that, in bars 4 and 5, the performer is required to play double-stopped fifths instead of the thirds which would occur on a normally tuned instrument (see example 4.18). This makes the tuning of the chords much more difficult than would otherwise be the case, as the violinist is made to stop two strings at once with the same finger.

The image shows two staves of musical notation. The top staff is labeled 'Violin in scordatura' and the bottom staff is labeled 'Violin at sounding pitch'. Both staves are in treble clef with a key signature of two sharps (F# and C#) and a common time signature (C). The music consists of eighth notes. In the scordatura staff, there are two instances of a fifth interval (5th) indicated by a bracket and the label '5th' above the notes. The sounding pitch staff shows the same notes as they would sound in standard tuning.

Example 4.18: Added difficulty; 5ths as a result of scordatura. Sonata VII, Allamanda, bars 4-5.

Furthermore, in the semiquaver passagework at bar 6, the scordatura dictates that the string crossings are much more difficult to achieve smoothly than they would be in conventional tuning; the fact that the bow must leap across more strings adds a disjointed, awkward effect to the sound (see example 4.19).

The image shows two staves of musical notation. The top staff is labeled 'Violin in scordatura' and the bottom staff is labeled 'Violin at sounding pitch'. Both staves are in treble clef with a key signature of two sharps (F# and C#) and a common time signature (C). The music consists of semiquaver (sixteenth) notes. The scordatura staff shows a sequence of notes that are physically difficult to play due to the string crossings required. The sounding pitch staff shows the same notes as they would sound in standard tuning.

Example 4.19: Added difficulty; disjointed semiquaver passagework. Sonata VII, Allamanda, bars 6-7.

In order to achieve these intervallic leaps, then, a much bigger physical gesture of the bow arm is required than would normally be the case, creating greater technical difficulty for the performer and, as such, functioning as an ideal emblematic representation of the ‘difficulty’ of the sonata’s subject matter. From the point of view of the audience this is a very powerful device, in that the physical gesture they see the performer make does not correlate with the sounds that they hear.

Biber uses the same device in order to achieve a very different effect in the seemingly static Variatio II of the same sonata. Here, the bow changes string every quaver, rocking back and forth between the third and second strings respectively. As a result of the physical gesture of the right arm that this entails, the audience would expect the second note of each slur to sound higher than the first. The two notes are, however, the same pitch; all that is altered as a result of the bow changing string is the note’s timbre (see example 4.20).

Example 4.20: Discrepancy between pitch and gesture. Sonata VII. Variatio II.

Through his use of scordatura in Sonata VII, then, Biber deliberately creates a discrepancy between what the audience sees and what they hear. They hear (and the performer sees in the score) an outwardly simple dance suite in F major, but what they see are often more violent gestures of the bow, or string crossings which confound their expectations by producing unison notes. In this way the scordatura can be seen to possess its very own mystical and allegorical vocabulary which draws the audience into the performance, by confronting them with what they do not expect and forcing them to re-evaluate the sounds of each piece; they must decipher its ‘riddles of composition’ (Filippi, 2005: 523), in order to understand it.

Scordatura and Structure

So far we have examined Biber’s emblematic encoding, through his use of scordatura, of what Bruna Filippi calls ‘the refined riddles of composition’ (Filippi, 2005: 523) within individual pieces in the *Mystery Sonatas*. However, as we have seen, Filippi also identifies the ability to decipher the emblem’s ‘hidden structures’ (Filippi, 2005: 523) as an essential aspect of understanding its metaphorically presented moral or spiritual message.

The use of structure to reflect the philosophical content of a piece of music is, once again, an oft-noted feature of the major works of J.S. Bach. For instance, in the *St. John Passion*, Wilfrid Mellers has noted that the central section of Part II, pivoting around the chorale ‘Durch dein Gefängnis, Gottes Sohn’,⁴⁷ forms a chiasmic

⁴⁷ Movement 22 in the Neuen Bach-Ausgaben edition.

structure... [both] in general terms, with the disposition of the kinds of materials and keys [and] in particular terms, with literal repetitions or adaptations' (Mellers, 1980: 155). With regard to the types of movement that Bach uses, this symmetrical chiasmic structure can be seen below in figure 4.4:

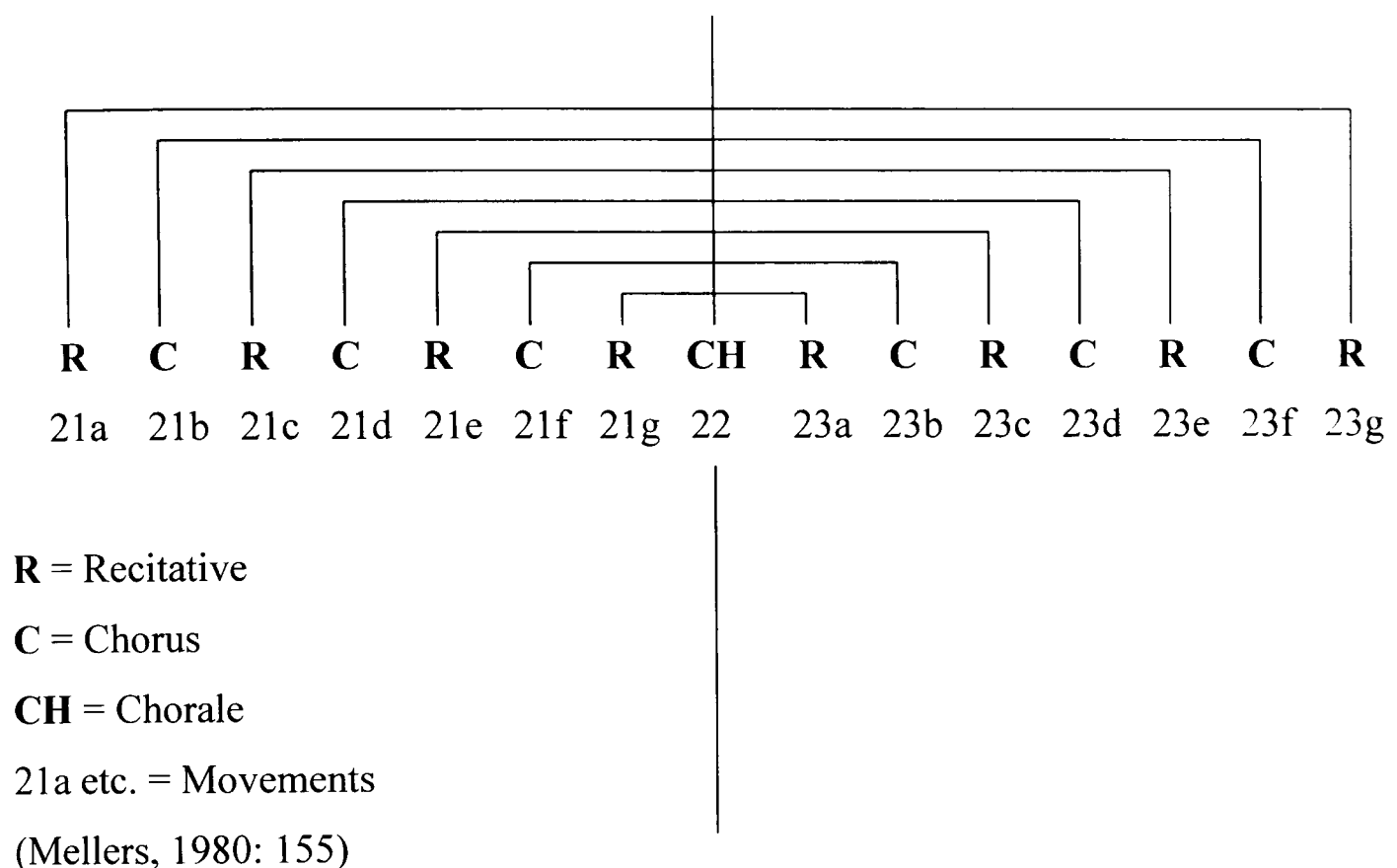


Figure 4.4: Chiasmic structure of movement types in the *St. John Passion*.

Within this mirrorlike structure there are, likewise, symmetrical repetitions of thematic material in, for example, movements 21d and 23d, and in 21f and 23b.

In exactly the same way as in the *St. John Passion*, Christoph Wolff has shown how the 'Symbolum Nicenum' in Bach's Mass in B Minor presents an entirely symmetrical movement structure (Wolff, 2001: 440), which pivots around the three-part central choral section comprised of the 'Et incarnates est', the 'Crucifixus', and the 'Et resurrexit' (see figure 4.5).

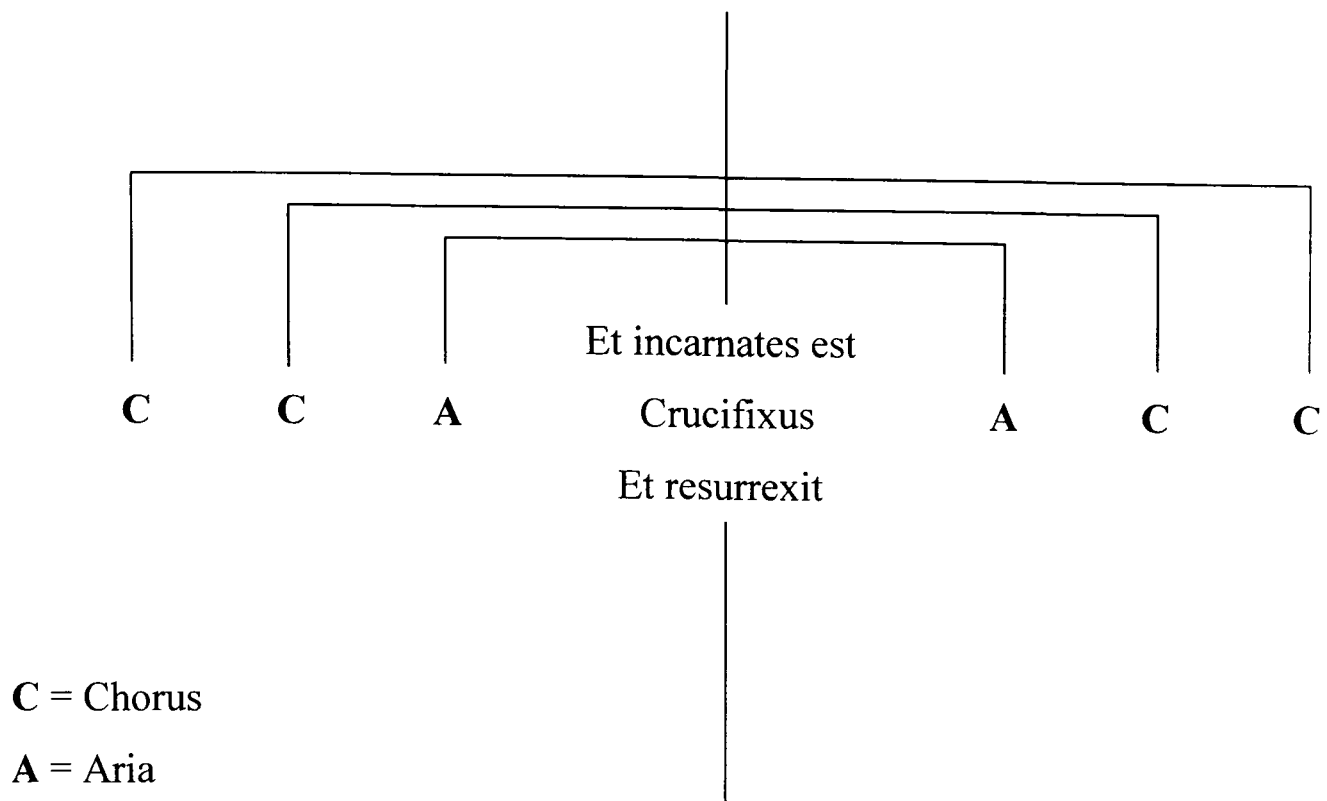


Figure 4.5: Chiasmic structure of movement types in the Mass in B Minor.

Furthermore, Bach even made use of the *chiasmus* as a structuring device in his instrumental music. This can be seen very clearly in the Sonatas for Violin and Harpsichord BWV 1014-1019, which effectively present a double layered Cross structure. First, it is an oft-cited fact that the intervallic layout of the sonatas' key scheme is symmetrical, closely resembling the formal planning we have seen in the *St. John Passion* and the Mass in B Minor (see figure 4.6).

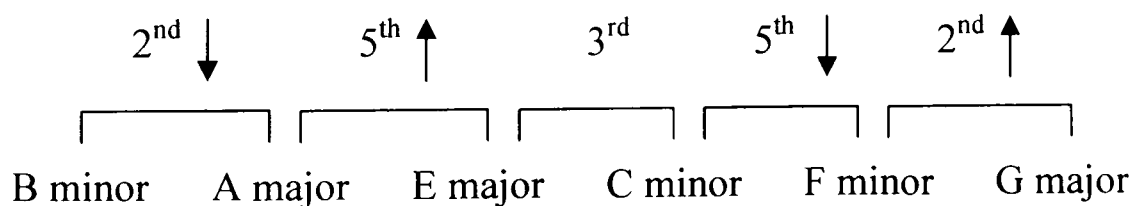


Figure 4.6: Symmetrical key structure in Bach's *Sonatas for Violin and Harpsichord*.

However, a secondary symmetry is also at work in this scheme, involving a relationship formed around a ring of concentric major thirds which, when combined with figure 4.6, creates an image of the Cross (see figure 4.7).

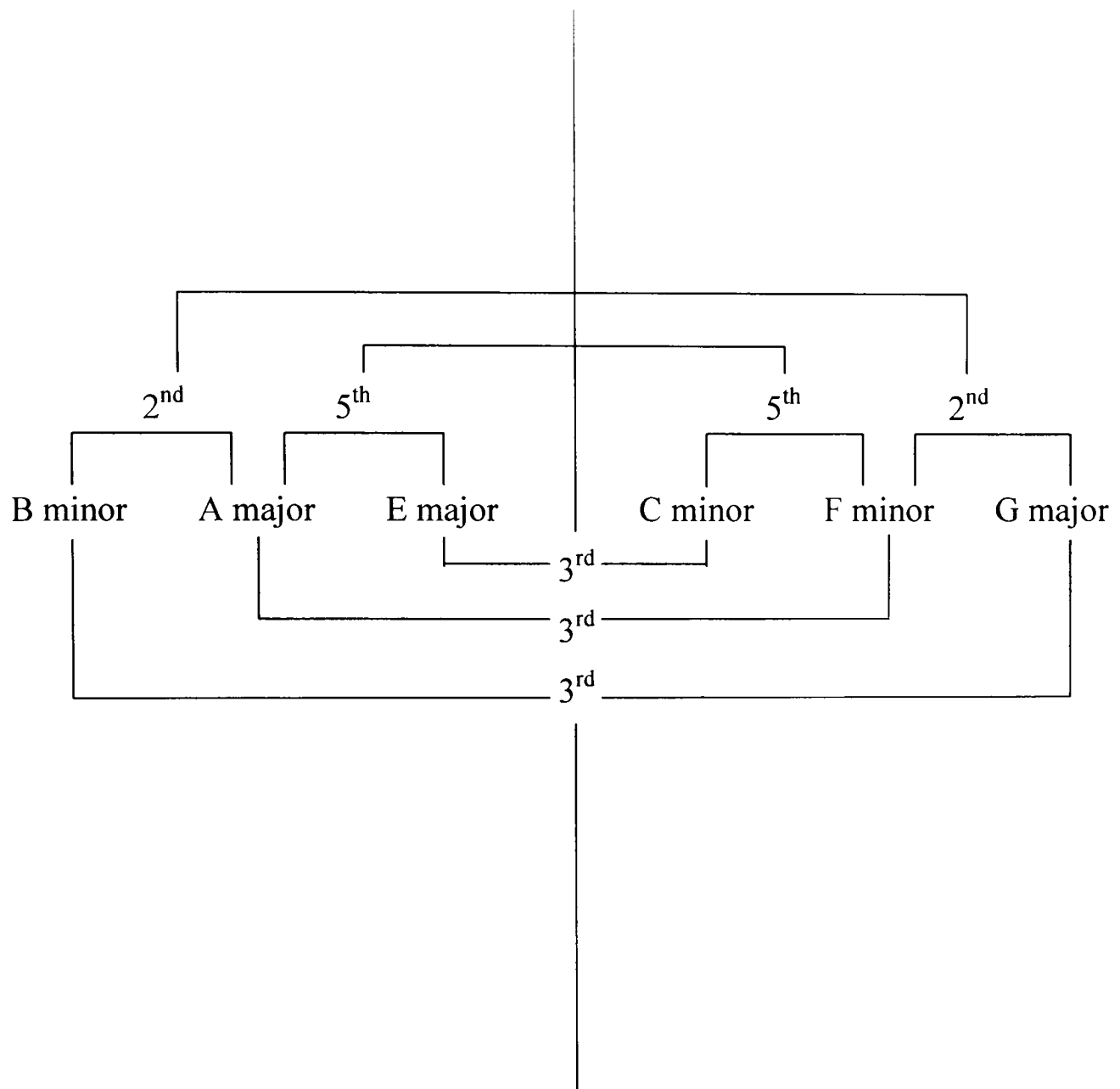


Figure 4.7: Chiasmic key scheme in Bach's *Sonatas for Violin and Harpsichord*.

Hence it can be seen that, just as it was an aspect of his melodic, textural, and rhythmic thinking, the *chiasmus* figure also forms an essential component of Bach's structural compositional language. Yet again, however, it is the contention of this thesis that Biber, working 50 or so years before Bach was writing the great Passions, alighted upon a similar structural method of composition through his use of scordatura. There are, for instance, a number of thematic indicators, in the form of self-quotation, contained within the *Mystery Sonatas*, which serve to show large-scale structural planning on the part of the composer. The most noted example of this occurs in Sonata X (the Crucifixion), which quotes from Sonata III (the Nativity; see examples 4.21i and 4.21ii).

Example 4.21i: Sonata III Adagio, bars 5-7.

Example 4.21ii: Quotation of Sonata III in Sonata X Adagio, bars 8-10.

As Reinhard Goebel has shown, this foreshadowing of the music which will occur in the sonata depicting Christ's death during the sonata depicting his birth, is a device borrowed from a long tradition in Christian art:

Just as, in pictorial art, the Christ child lying in his crib may be surrounded by the torture instruments of his execution... so, too, the composer quotes here three bars from the 'Crucifixion' sonata. (Goebel, 1991: 12)



Figure 4.8: *The Nativity* (1523): Oil on wood, by Lorenzo Lotto. Shows the foreshadowing of the Crucifixion in the top left hand corner.

Biber uses exactly the same device, again in Sonata X, at the opening of the Aria section. This time he recalls a modified version of the opening of the Aria from Sonata I (the Annunciation), another birth related sonata (see examples 4.22i and 4.22ii). Furthermore, the structure of the Crucifixion sonata can also be seen as a

quotation of the Annunciation; both pieces consist of an opening Præludium followed by an Aria and variations, and are the only two examples of such a structure thus far in the set. This structural quotation effectively provides a pair of musical bookends, punctuating the section of the rosary narrative which deals with the earthly life of Christ, beginning with his conception and ending with his death.

Example 4.22i: Sonata I Aria, bars 5-8.

Example 4.22ii: Modified quotation of Sonata I in Sonata X Aria, bars 1-4.

Similarly, aspects of chiasmic structural planning can be seen to occur in Sonatas IX (the Carrying of the Cross), X (the Crucifixion), and XI (the Resurrection). Walter Melion has demonstrated how, according to seventeenth-century Jesuit thought, the image of ‘the sacrificial body of Christ’ (Melion, 2005: 20), as represented in the rosary narrative by the Carrying of the Cross, was intimately linked to the Incarnation; the purpose of Christ becoming Man was that he would die on the Cross so that salvation might be achieved. This symbolic link between the Incarnation and Christ sacrificed, effectively makes the subjects of the ninth, tenth, and eleventh Mysteries – the Carrying of the Cross, the Crucifixion, and the Resurrection – the rosary’s equivalent of the ‘Et incarnatus est’, the ‘Crucifixus’, and the ‘Et resurrexit’ in the Catholic Credo. Remarkably, this similarity sees Biber treat the formal structure of the three sonatas in a way that strikingly resembles that

of the equivalent section in Bach's Mass in B Minor, in that the mirror-like shape of the *chiasmus* is, yet again, the primary structuring device. Just as Bach organised the movements in the 'Symbolum Nicenum' to create symmetry, so Biber effectively creates the impression of a mirror form in the way he orders Sonatas IX and XI around the central pivot of Sonata X. This is achieved in two ways: first, the placing of the free, prelude-like movement at the opening of Sonata XI is exactly mirrored by a movement identical in style at the end of Sonata IX. Secondly, just as is the case at the opening of Sonata XI, the final movement of Sonata IX is crammed with *chiasmus* figures, as well as thematic quotations from the Resurrection sonata (see example 4.23). The accumulation of *Kreuz* gestures and chiastic quotations at the end of Sonata IX in this way, effectively accelerates the narrative towards the pivot point, the Crucifixion, and, combined with the sheer quantity of similar figures at the opening of Sonata XI, serves to highlight the importance of this moment in the drama.

Violin in scordatura

Violin at sounding pitch

3

Quotation of Sonata XI, bars 12-13

5

Variation of Sonata XI, bars 23-4

8

10

Variation of Sonata XI, bars 14-18 and 28-31

12

The image displays a musical score for violin, divided into two staves: 'Violin in scordatura' (top) and 'Violin at sounding pitch' (bottom). The score is organized into several systems, each beginning with a measure number. The first system starts at measure 3. The second system, labeled 'Quotation of Sonata XI, bars 12-13', begins at measure 5. The third system, labeled 'Variation of Sonata XI, bars 23-4', begins at measure 8. The fourth system, labeled 'Variation of Sonata XI, bars 14-18 and 28-31', begins at measure 10. The fifth system begins at measure 12. The notation includes various rhythmic values, accidentals, and dynamic markings, with some notes in the scordatura staff indicated by dashed lines to show their relationship to the sounding pitch.

Example 4.23: Chiasmus figures and quotations in the Finale of Sonata IX.

Another final chiasmic aspect of the structure at this point, one that was surely not lost on a composer who was so clearly familiar with this kind of symbolism, is coincidentally provided by the ordering of the rosary narrative itself; the roman numerals of these three Mysteries, IX, X, XI, form a palindrome in themselves, with

a Cross as its central point – here X really does mark the spot – providing yet another layer to the ‘hidden structures’ (Filippi, 2005: 523) for the initiated audience to decipher.

It is, then, clear that, through his handling of the formal aspects of the *Mystery Sonatas*, Biber was very much aware of the structural complexities of the rosary narrative. Furthermore, it can be seen that, just as was the case at every other level of composition, scordatura plays the primary emblematic role in the structural organisation of the pieces.

We have already noted the far-reaching consequences of the emblematic nature of the *Mystery Sonatas*’ musical-metaphorical language, which occur as a result of the crossing of the middle two strings in Sonata XI. Yet another role played by this remarkable piece within the structure is its functioning as the prelude work for the set of five Glorious Mysteries; its purpose is to set the tone for the nature of the remaining events in the rosary narrative. In the same way, Sonatas I and VI form the prelude pieces to their respective sonata groups, the Joyful and Sorrowful Mysteries. As such, their relationship to each other is used by Biber as an important organisational device. As well as forming a superb metaphorical depiction of ‘agony’ in its own right, with the extraordinarily dissonant tuning $ab\ e\flat\ g'\ d''$, it is the case that Sonata VI’s scordatura is a chiasmic inversion of the conventional tuning used in Sonata I (see figure 4.9).

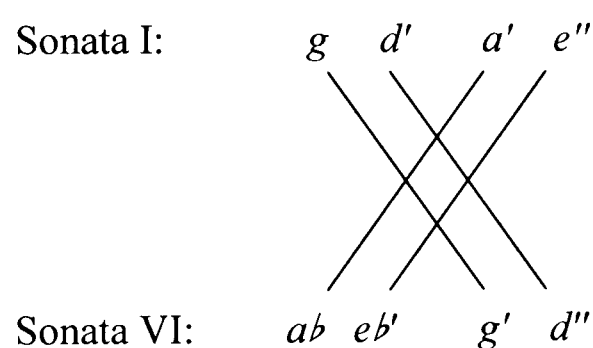


Figure 4.9: Chiasmic scordatura relationship in Sonatas I and VI.

The forming of a *chiasmus* by the scordatura in this way effectively represents, in musical-emblematic language, the opposing subjects of the Joyful and Sorrowful Mysteries, fulfilling on a larger structural scale the same purpose as the *exordium*-like *Kreuz* motive in bar 1 of the first sonata. Simultaneously, it succeeds in

reinforcing the all-pervasive sign of the Cross as the most important allegorical symbol in all of the *Mystery Sonatas*, and by making the Cross physically present Biber once again facilitates the experiential element of the Jesuit meditative method.

A chiastic structural approach to the arrangement of the scordaturas is also at work within each self-contained set of five sonatas. Biber achieves this through the way in which he carefully organises the relative tensions created by the retunings on the instrument across each group of Mysteries. For illustrative purposes, by totalling the degrees by which the four strings are raised and/or lowered in each sonata, a numerical representation of the violin's net gain/loss of tension can be established. By this method, the raising of a string by a semitone equals a gain of 0.5, whereas a raise by a tone equals a gain of 1. Likewise, the lowering of a string by a semitone will equal -0.5, and by a tone, -1. For example, Sonata II, in which no strings are lowered, but two strings are raised by a tone, has a net gain of tension equalling 2. The net results for each group of Mysteries is shown in figure 4.10.

Joyful Mysteries	Sonata:	I	II	III	IV	V
	Net tension:	0	2	4	0	0.5
Sorrowful Mysteries	Sonata:	VI	VII	VIII	IX	X
	Net tension:	-1	2	4.5	3.5	-1
Glorious Mysteries	Sonata:	XI	XII	XIII	XIV	XV
	Net tension:	-2	0.5	4	1	-3

Figure 4.10: Net tensions in the 15 *Mystery Sonatas*.

From this it can be seen that the scordaturas in each group of five sonatas do, in fact, follow the same basic chiastic structural shape, pivoting around the central third sonata, which has the highest net tension in each set⁴⁸ (see figure 4.11).

⁴⁸ Although Sonata V achieves a higher net tension than Sonata IV, the controlling force of the top string, which in Sonata V is tuned lower (to $c^{\#}$), effectively means that the piece seems to have a more 'relaxed' tuning than Sonata IV, especially in the higher register. Apparent symmetry is, therefore, retained.

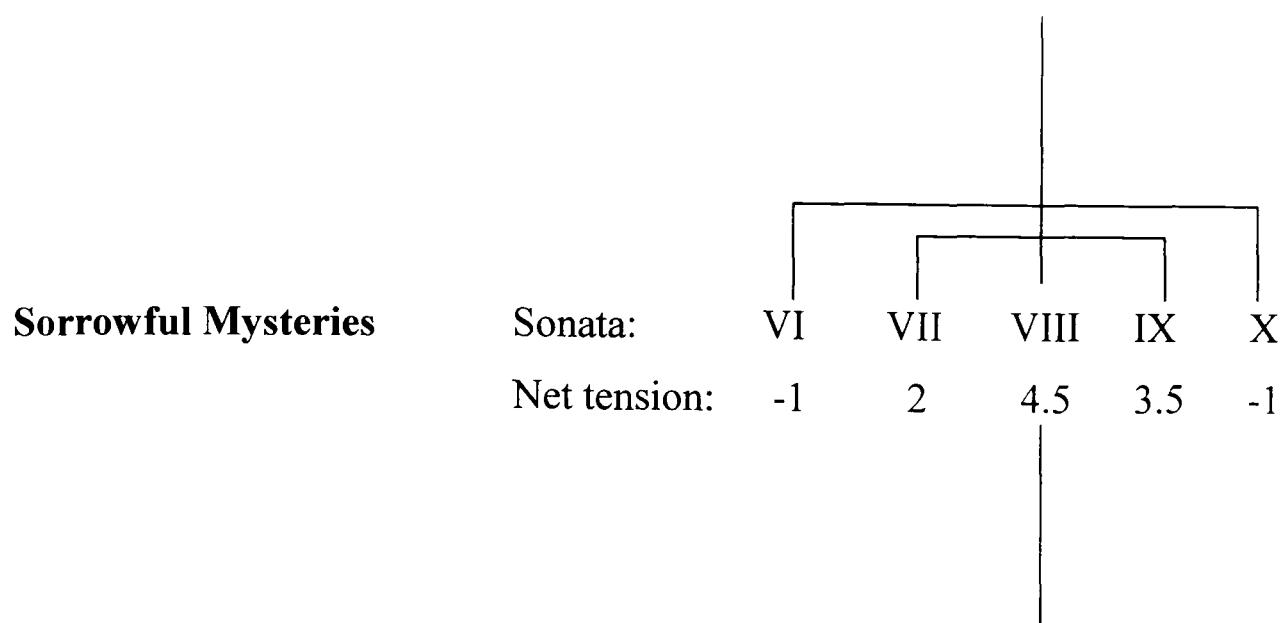


Figure 4.11: Chiastic structure of the scordaturas in the five Sorrowful Mysteries.

A similar process is also at work across the macro-structure of all 15 *Mystery Sonatas* and the concluding unaccompanied Passacaglia; Sonata VIII has the highest net tension of all the *Mystery Sonatas* and falls exactly in the centre of the rosary narrative. Furthermore, by opening and closing the set with the only two works that share the same tuning, Sonata I and the unaccompanied Passacaglia provide one final layer of symmetry to the structure (see figure 4.12).

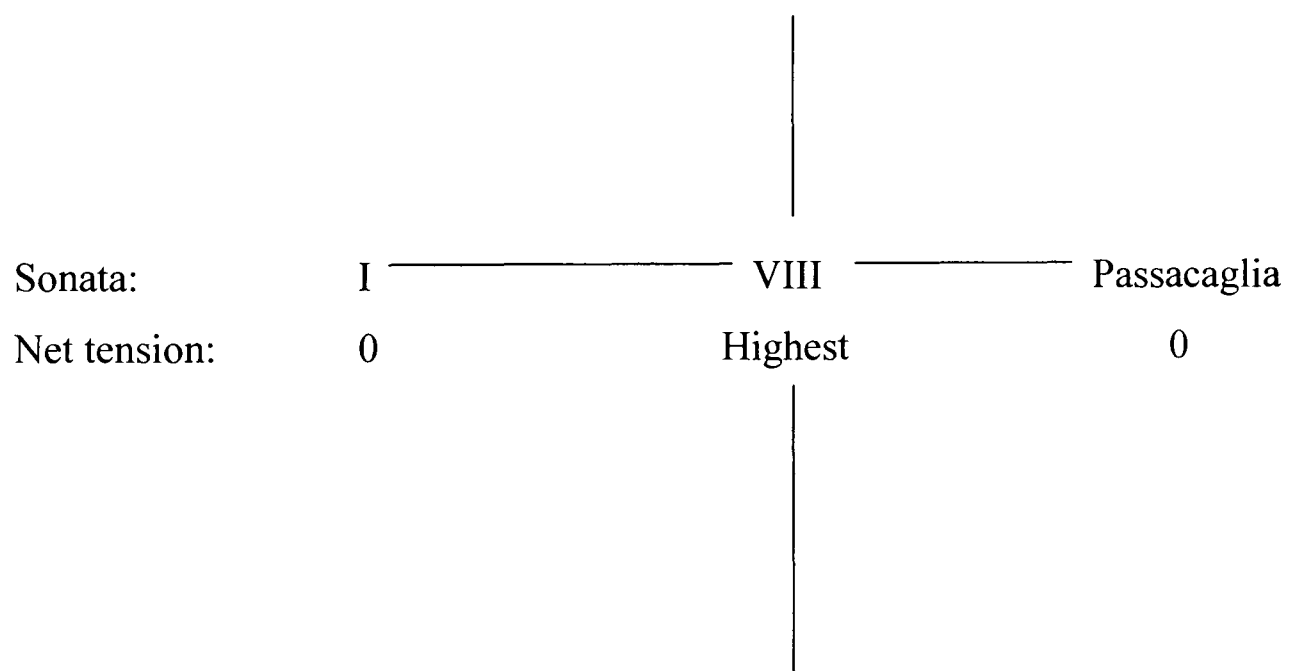


Figure 4.12: The Chiastic structure of all 15 *Mystery Sonatas* and the Passacaglia.

We can now see that, through a stunningly complex interlocking and emblematic arrangement of the scordaturas in the *Mystery Sonatas*, Biber is able to affirm at every stage of the compositional process the prevalence of the Cross, the central

symbol of Christian thought, as an allegorical presence. With this in mind, the role of the sixteenth piece in the set, the Passacaglia for unaccompanied violin, becomes clear. The Passacaglia's subject, depicted by the preceding ink drawing of a child with its guardian angel, stands outside rosary narrative, a fact made clear by Biber's scoring; it is the only piece in the collection without a basso continuo part. However, by including a work associated with the feast of the guardian angel, which traditionally took place at the end of the rosary celebrations, and by returning to a conventional tuning, Biber provides an effective postlude to the set. Having explored every possible variation of texture and timbre, as well as the limits of allegorical expression throughout the 15 'special' tunings, the Passacaglia completes the cycle of scordaturas, adding one last layer of symmetry to the whole formal design.

CONCLUSION

In chapter 1 of this thesis it was shown that Quantz, who played Biber's published violin music as a student, dismissively implied that scordatura was apt only for 'absurd characteristic pieces, [the kind of] which are no longer remembered' (Quantz, 1752: 337). Similarly, the classing of scordatura as a virtuosic device, suitable only for the purpose of display, has persisted through the ages until the recent past. However, a detailed examination of Biber's *Mystery Sonatas* reveals that, in these pieces, scordatura's greatest ever exponent, who was himself renowned as an 'eminent virtuoso' (Stainer cited in Boyden, 1965: 195), was far from concerned with this kind of violinistic effect. Rather, he uses scordatura as a highly developed mystical and metaphorical musical language in its own right, capable of codifying and expressing the complex allegorical 'hidden structures' and 'refined riddles of composition' (Filippi, 2005: 523) inherent within the rosary narrative. Indeed, this language of scordatura is able to function at every level of the composition, from structure to ornament, always serving to reinforce the work's content.

We have seen in chapter 1 that, although it has been suggested that the manuscript of the *Mystery Sonatas* dates from the 1670s, and before 1676 (Luntz cited in Chafe, 1987: 186), its lack of a title page means that it is impossible to be certain about when the pieces were written and precisely what their purpose was. Indeed, Eric Chafe has raised the possibility, based on stylistic analysis and the fact that scordatura was especially popular with Prince-Bishop Karl Liechtenstein-Castelcorno, Biber's employer in Kroměříž, that many of the *Mystery Sonatas* may have been written there before 1670, and only later compiled as a set based on the subject of the rosary (Chafe, 1987: 186-7). This argument is strengthened by the existence of a version of Sonata X (the Crucifixion) which uses a different tuning and bears the title *The Victory of the Christians over the Turks* (see page 74), and the listing in the Michaelbeuern inventory of a *Sonata Paschalis: Surrexit Christus Hodie* (no longer extant) which was, according to Chafe, 'undoubtedly the eleventh of the *Mystery Sonatas*' (Chafe, 1987: 187). It is the case, therefore, that some of the pieces which make up the *Mystery Sonatas* may not have been originally conceived as a cycle, but composed as separate works. However, the fact that the reworking of Sonata X as *The Victory of the Christians over the Turks* is transposed and uses a

different tuning, combined with the clear structural design with which the scordaturas provide the set, leads the author to speculate that although the *Mystery Sonatas* themselves may not have been conceived as a cycle, their scordaturas most certainly were. In other words, it seems probable that if Biber did make use of pre-existing music which he thought appropriate for the set, he then imposed new tunings upon it in order to fit his allegorical structural design; as we have seen in chapters 3 and 4, the emblematic linking of the scordaturas to the subject depicted in the engraving which precedes each sonata is entirely consistent throughout the *Mystery Sonatas*.

One of the most contentious performance issues associated with the *Mystery Sonatas* in recent times is the question of the number of instruments it is appropriate to use in a performance. For instance, in their recordings, Andrew Manze (2004) and Walter Reiter (2001) use just one violin; in contrast John Holloway (1990) uses two, Monica Huggett (2004) uses three, Reinhard Goebel (1991) uses four, and Pavlo Beznosiuk (2004) uses five. As David Boyden states, the use of multiple instruments is a practical solution to the problems of tuning in scordatura music (Boyden, 1981: 57). However, the allegorical nature of Biber's use of scordatura as the unifying structural and narrative voice in the *Mystery Sonatas* is, perhaps, the strongest argument for the use of a single violin; it is the case that the mechanical changes caused by the successive retunings, seen in chapter 3, are responded to differently on each individual violin, and so from the point of view of the instrument's function as narrator, equivalent to Bach's Evangelist in the Passions, a single instrument seems to be preferable.

In addition to playing a number of instruments on his recording, Goebel varies the way that they are strung; he uses strings which 'correspond to three different pitch standards ($a' = 415, 440, \text{ and } 465$)' (Goebel, 1991: 13). Thus, although the pitch standard throughout his recording is $a' = 415$, when Biber specifies an over-strung scordatura, Goebel selects strings suited to a higher pitch in order to 'optimise' the amount of sound that the violin produces across all four strings (Goebel, 1991: 11-13). However, the equalising of the sound produced across the whole of the violin's range has the effect of homogenising each scordatura so as to nullify the deliberate inequalities between the strings which, as we have seen, are integral to the allegorical expression of the rosary cycle. Furthermore, this approach lessens the contrast between each of the successive scordaturas, which play such a

vital role in the experiential quality of the *Mystery Sonatas*: the violin's ability to physically create the affective content of the *Mystery Sonatas* through the emblematic representations brought about by the scordatura, so that the audience experiences the recounted events as if they were present, means that the instrument represents metaphorically the characters within the narrative. By using one violin and a single set of strings, the physical changes brought about by the scordaturas are emphasised and enable the violin to literally experience the events it describes. In other words, it is able at once to enact the drama of the rosary narrative, and to stand outside it, in the present, as the reporter of events to the audience.

In this way the comparison of Biber with Bach is valid; both men, in their individual ways, were able to devise a method, based on the total mastery of their respective musical idioms, through which the spiritual and philosophical content of their pieces, and of their own beliefs, could be transmitted to the audience, and it is this that makes their works so endlessly fascinating today.

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THESIS CONTAINS TWO DISCS.

HEINRICH IGNAZ FRANZ BIBER: MYSTERY SONATAS

DISC 1

THE JOYFUL MYSTERIES

- I The Annunciation
- II The Visitation
- III The Nativity
- IV The Presentation in the Temple
- V The Finding in the Temple

THE SORROWFUL MYSTERIES

- VI The Agony in the Garden
- VII The Scourging
- VIII The Crowning with Thorns
- IX The Carrying of the Cross
- X The Crucifixion

Daniel Edgar: Baroque Violin
Rachel Gray: Baroque Cello
Peter Seymour: Chamber Organ

St Wilfred's Catholic Church, York: July 21st 2008
Performed on one violin
Pitch: a' = 465

HEINRICH IGNAZ FRANZ BIBER: MYSTERY SONATAS

DISC 2

THE GLORIOUS MYSTERIES

- XI The Resurrection
- XII The Ascension
- XIII The Descent of the Holy Ghost
- XIV The Assumption of the Blessed Virgin
- XV The Coronation of the Blessed Virgin

- XVI Passacaglia

Daniel Edgar: Baroque Violin
Rachel Gray: Baroque Cello
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