

# Bach and the Holy Trinity

Lecture and performance given by David Rumsey

in University of Sydney's Great Hall

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as a tribute to Prof. Eric Sharpe's work at the University

In the Year 1739, Johann Sebastian Bach, then resident in Leipzig and aged 54, composed a collection of pieces of organ music, printed it from magnificently engraved copper plates which he had painstakingly produced himself, and published it. The title-page gave little away - it announced it as the

“Third Part of the Clavier Übung, consisting of various preludes on the Catechism and other Melodies for the Organ. Produced for the recreation of the spirit of those who love these arts and especially connoisseurs - by Johann Sebastian Bach, Royal Polish and Saxon Court Composer, Kapellmeister and Director of Choral Music in Leipzig. Published by the Author.”

The term *Clavier Übung* is of interest - ultimately he produced four volumes under this generic title. It is perhaps best translated as “Compendium of Keyboard Practice”. As a keyboard player himself this would have had special significance to Bach: indeed all the other volumes were harpsichord music - Volume I: the six partitas published in 1726-30, Volume II the b minor partita and the Italian Concerto, published in 1735, and part IV the Goldberg Variations, published around 1736.

It must immediately strike us as odd that volume III was knowingly published after Volume IV. Why did he not simply number them according to the chronology of their completion? The answer to this could only lie in the fact that volume III was the odd one out. Certainly it was the most substantial of all the volumes in terms of the amount of music - the sheer mass of notes. But that alone does not explain why it had to be volume III rather than, more logically, indeed in proper chronology, IV. The fact that it was sacred organ music provides us with a possible clue - the other volumes were all secular harpsichord music. But that alone would not seem an overwhelming reason to make it volume three: the organ has no particular claim on the number 3, nor the harpsichord on 1,2 or 4.

But if we take the organ, its strong associations with the church in the culture of 18<sup>th</sup> century Germany, Bach's own Lutheran faith, the dedication page, especially its reference to Catechism, and the structure of the work into account, we begin to discern stronger and more logical associations to the number 3. Its contents are:

### CLAVIERÜBUNG III

#### BWV

- |    |     |  |
|----|-----|--|
| 1  | 552 | Prelude in E♭ major  |
| 2  | 669 | Kyrie, Gott Vater in Ewigkeit, Canto fermo in Soprano, a 2 Clav. et Ped.                             |
| 3  | 670 | Christe, aller Welt Trost Canto fermo in Tenore, a 2 Clav. et Pedal                                  |
| 4  | 671 | Kyrie, Gott heiliger Geist, à 5 Canto fermo in Basso, Cum Organo pleno                               |
| 5  | 672 | Kyrie, Gott Vater in Ewigkeit alio modo, manualiter  |
| 6  | 673 | Christe, aller Welt Trost  |
| 7  | 674 | Kyrie, Gott heiliger Geist   |
| 8  | 675 | Allein Gott in der Höh' sei Ehr' à 3, Canto fermo in alto  |
| 9  | 676 | Allein Gott in der Höh' sei Ehr' a 2 Clav. et Pedal  |
| 10 | 677 | Fughetta super Allein Gott in der Höh' sei Ehr' manualiter   |
| 11 | 678 | Diess sind die heil'gen zehn Gebot a 2 Clav. et Ped., Canto fermo in canone                          |
| 12 | 679 | Fughetta super Diess sind die heil'gen zehn Gebot /manualiter  |
| 13 | 680 | Wir glauben all' an einen Gott In Organo pleno con Pedale  |
| 14 | 681 | Fughetta super Wir glauben all' an einen Gott manualit:  |
| 15 | 682 | Vater unser in Himmelreich à 2 Clav. et Pedal è Canto fermo in Canone                                |
| 16 | 683 | Vater unser im Himmelreich alio modo, manualiter   |
| 17 | 684 | Christ, unser Herr, zum Jordan kam a 2 Clav. è Canto fermo in Pedal                                  |
| 18 | 685 | Christ, unser Herr, zum Jordan kam alio modo, manualiter   |
| 19 | 686 | Aus tieffer Noth schrey ich zu dir a 6, in Organo pleno con Pedale doppio                            |
| 20 | 687 | Aus tieffer Noth schrey ich zu dir a 4 alio modo, manualiter   |
| 21 | 688 | Jesus Christus, under Heiland, der von uns den Zorn Gottes wandt/a 2 Clav.<br>e Canto fermo in Pedal |
| 22 | 689 | Fuga super Jesus Christus, unser Heyland a 4 manualiter  |
| 23 |     | “Duet” 1   |
| 24 |     | “Duet” 2   |
| 25 |     | “Duet” 3   |
| 26 |     | “Duet” 4   |
| 27 | 552 | Fugue in E♭ major  |

We can summarize and categorise this structure as:

Prelude		Liturgical
3 “Large” Kyrie settings	(father, son, holy ghost)}	
3 “Small” Kyrie settings	(father, son, holy ghost)}	“Missa brevis”, Lutheran Mass
3 Glorias	}	
12 (6 x twin settings)		Catechism, theology
4 “duets” or 2-part inventions		Johann Steglich = 4 elements
Fugue		Liturgical

Here we are struck by the recurrence of the number 3: not only in the 3 groupings of 3 Chorale settings forming the “Liturgical” section of the work, but the total of 3x3x3, ie 27 pieces. Further investigations which we will make later add to this the fact that the Prelude has Three Themes, and the fugue is a Triple Fugue, with 3x3x3 entries of its theme.

As we shall see, this consistency of encrypting the number three into this collection may have something to do with the apparently illogical chronology of publication of these four volumes. Clearly Trinitarian concepts would be the most logical connection to inspire such musical structures - but if this common assumption is indeed true we must weigh it up against the fact that the Trinity is not expressly mentioned in the Dedication, rather it speaks of Catechism and Hymns.

I intend to investigate here some links between theology and doctrine, the motivation that Bach could have had to produce such a dedicated volume, the support which known musical practice and general culture of the 18<sup>th</sup> century might give in particular to the Trinity-hypothesis in this connection, particularly the Prelude and Fugue which open and close it, then play them for you on the Great Hall organ.

## TRINITY

The theology of the Christian Trinity is a fascinating phenomenon: it has virtually no Biblical justification, was the cause of considerable doctrinal argument over the past 2 millennia, and challenges the very foundations of “one God” with what sounds suspiciously like tritheism. Nevertheless after the turbulent first few centuries of Christianity most denominations, including the followers of Martin Luther, accepted the doctrine of the Three-in-One. However Unitarianism developed in central Europe in the very century of the Lutheran Reformation and a problem at one time for that Church was Socinianism or Socinism - this held similar views to Unitarians.

All evidence points to the fact that Johann Sebastian Bach was an orthodox Lutheran, embracing the firm and normal beliefs of that faith in the Trinity. The rise and development of 17<sup>th</sup> Century German Pietism had its influence on him, and we do have slight evidence - notwithstanding some parts of his Passion Music, that he was not always comfortable with the inequalities inherent in any tendency to Christ-centred Trinitarianism.

We should also remember here just how important music was to Luther and his followers: this manifested itself in strong links between music and rhetoric in 17<sup>th</sup> and 18<sup>th</sup> century Germany.

Rhetorical traditions date back to classical Greece - Aristotle, Cicero, Quintilian and others. But it was the German Reformation that provided special links between rhetoric and music. Luther encouraged the concept that music was not merely a beautiful art form, but ranked “next to theology”. During the Renaissance music began to shift from a mathematical discipline (where it had co-existed with astronomy, mathematics, and geometry in the quadrivium of the seven liberal arts) to the predominantly linguistic and humanistic disciplines associated with the trivium (logic, grammar, and rhetoric). As early as 1537 we have written evidence of Lutheran connections between rhetoric and music in a textbook, *Musica*, for use in German classrooms. It was written by Nicolaus Listenius, a Wittenberg schoolmaster. Direct evidence of Bach’s links with rhetorical practice and its application to music, exist *inter alia* in his friendship with Abraham Birnbaum, instructor in rhetoric at the University of Leipzig.

Thus Lutheranism evolved a strong equality between bible and hymn-book, between Pastor and Cantor in the ecclesiastical culture of this era. A Cantor such as Bach would have seen himself, and been seen, as a kind of musical Pastor, with equal authority and responsibility: the religious message and leadership was the same, the rhetoric of the preaching the same, but the medium was music rather than speech.

In that connection and in this culture we can observe Bach’s musical preaching as not only the week-by-week duties of creating and performing music for the services, but from time to time issuing great statements of faith literally speaking through his music, a preaching and teaching medium appropriate for a Cantor. At all stages in his life he produced monumental statements of this kind:

Liturgy (b-minor mass 1730's)

Church Seasons (Christmas - Canonic Variations, Christmas Oratorio; Easter - Easter Oratorio, Passion: Johannes, Matthäus and others, now lost).

Organ Music was a naturally favoured medium for this kind of activity: Orgelbüchlein of 1717, Schübler of 1747, the “Eighteen Chorales”, the Passacaglia an early essay into Covenant Theology, all involve strong liturgical and/or doctrinal and theological considerations.

Indeed it would have been strange had he not, in this lifetime of musical preaching, dedicated something major to the Holy Trinity.

Not that the Trinity went unacknowledged: we find a few references to Trinitarianism as such in many of his works. Elements appear in the earlier works, such as Orgelbüchlein, some of the Cantatas, the extant Passions, the b minor Mass. But it is generally only insofar as Father, Son or Holy Ghost are mentioned briefly and separately. Cantata 176

“Es ist ein trotzig und verzagt Ding” may represent an attempt for Bach to deal more explicitly with this doctrine in his use of Paul Gerhard’s Trinity hymn as the closing chorale. If it is - and the incidence appears meaningful and preliminary rather than critical and developed in the global context of Bach’s music - then at least we can date an elevated interest in Trinity concepts from this cantata: 1732. This might be significant, since the work we shall be considering in a moment was completed only 7 years later.

But until the Clavierübung III the total concept of the Trinity - as important as it was - was never exhaustively treated by Bach. We can imagine that the Thomaskantor was very conscious of this - particularly as it was by then one of the only significant remaining doctrines, church seasons or theologies that he had omitted to turn his full attention to.

Nor could he so easily have done this since the Trinity is not actually Biblical and Bach treated mainly biblical texts (or poetic versions of these) in his Cantatas, Passions, or organ chorale settings. There is no scriptural textual possibility, and the chorale books have an amazingly limited repertoire of actual Trinity hymns - for example even today the German Lutheran Church has only 3 specifically-identified trinity hymns.

By 1739 time was certainly ripe for attention to the Trinity, but whether the Pietists or simply the Trinity-free zone created by earlier music caused the prime motivation for Bach is not yet clear. Nevertheless the opportunity to assert Trinity doctrine against the disturbances created by Unitarians or Socinians could have been a consideration.

## THE LANGUAGE AND CULTURE OF 18<sup>TH</sup> CENTURY MUSIC

The culture of Bach’s contemporaries was rich in literary and musical pastimes and symbolism. Bach himself wrote puzzle-canon, his students presented him with chalices which bore meaningful and secret-encoded inscriptions, one of his librettists, the famous Picander, was involved in Cabbala-related numerology, and books were published throughout this time leaving no doubt that there were dimensions of symbolism and numerology in all art, including literature and music. Music went far beyond the superficial process of just placing nice-sounding notes on a piece of manuscript paper. This culture, its clearly-documented philosophy, practice, and developed musical language, were all different from our own and cannot be judged from our own perspectives without prior investigation.

In a lecture which I gave on 4<sup>th</sup> September 1996 for the Society of Literature and Aesthetics at the University of Sydney, aspects of Bach’s compositional processes were investigated. In particular his application of 18<sup>th</sup> Century Musical Affektenlehre, Figurenlehre, Biblical Symbolism and Cabbala-derived Numerology were related to his

musical textures, expression and structures.

The use of paragrams and gematria in Bach's literary, rhetorical and mathematical culture was shown to exist in his music. The variety of available number-alphabets - Latin milesian, Latin natural order, Pyramidal, dodecangular, octangular, cubica and so on - was investigated and proof offered that Ruth Tatlow's Latin Natural Order variant one was the only such alphabet Bach could have used. This coincidentally also proved statistically beyond all reasonable doubt (to better than 1 in 5 trillion trillion trillion) that Bach was active in this area. To those who were there I trust that I need offer no further justification for what I am about to say. For those who were not I beg of you, if necessary, to take a temporary leap-of-faith in accepting some of the material which now follows. Viewed from a twentieth century perspective it may seem far-fetched, but from a mid-eighteenth century perspective it was a quite normal practice in religious, literary and musical fields. In the course of that paper I discussed certain elements of this 18<sup>th</sup> century German musical language:

1) Affektenlehre - known in English as "Doctrine of the Affections":

was the belief held in the 17th and early 18th Centuries, that the principal aim of music is to arouse the passions or affections (love, hate, joy, anger, fear, etc., conceived as rationalised, discrete and relatively static states)<sup>1</sup>.

2) Figurenlehre, a fully documented 18<sup>th</sup> century practice of music defined as

"Any of various attempts made in the 17th and 18th Centuries to codify music according to classes of musical figures thought to be analogous to the figures of rhetoric"<sup>2</sup>.

And furthermore:

". . . the whole of the Baroque *Affektenlehre* was predicated on [hermeneutics], and all composers of the age attempted to portray words, even ideas, by using musical figures that have a pictorial quality expressible in the very graphic image of the score. . ." <sup>3</sup>

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<sup>1</sup> ed. Don Randel, *The New Harvard Dictionary of Music*, Belknap Harvard

<sup>2</sup> ed. Don Randel, *The New Harvard Dictionary of Music*, Belknap Harvard

<sup>3</sup> Paul Henry Lang *George Frideric Handel* (Faber & Faber) especially pp.624ff.

3) Biblical Mathematics - also abundantly documented - particularly in evidence during Bach's lifetime - from the "Paradoxal-Discourse" of Andreas Werckmeister (1707) to Johann Jacob Schmidt's *Biblische Mathematicus* of 1736. These writers were concerned with such matters as Holy numbers, 3 and 7, the 77 generations from Adam to Christ, and so on. Typically, Werckmeister's "Paradoxal-Discourse" chapter 19 is entitled "Von der Zahlen geheimen Deutung" ("Of the secret meaning of numbers"). It gives a basic listing of number-symbols, conjuring up distinct memories of Leibnitz who claimed that Music is an "unconscious exercise in arithmetic". Werckmeister wrote:

"... the musical intervals are nothing other than numbers and proportions and since God created and ordered everything in Numbers, Proportion and weighting, so also must the musician, indeed every person, be diligent and study how to reproduce such marvellous Order."

4) The use of Number Alphabets (gematria) to derive numerological equivalents to names. Thus Bach's name was expressible as the number 14: B=2+A=1+C=3+H=4 sums to 14. The German Musicologist Friedrich Smend in particular has dealt exhaustively with this subject, especially in his book on the Cantatas of Bach<sup>4</sup>. Contemporary references from musicians and writers of Bach's time leave us in no doubt that this was a common currency of art and life.

5) Musical Cryptography: This was the practice of encrypting references in a composition, everything from a composer's name, such as Bach's own documented use of the notes B $\flat$ -A-C-B $\natural$  (in the German musical notation these notes are read as B-A-C-H) to Frederick IIIrd's presumed ascension to Heaven in a commemorative piece written by Johann Jacob Froberger (1616-1667) which concludes with an ascending F major scale culminating on 3 repeated F's and a drawing showing Frederick levitating in clouds.

It is difficult in the late 20<sup>th</sup> century to sort out what occurred in the mid-18<sup>th</sup> by chance or intentionally in such peripheral and normally undocumented adjuncts as numerology and symbolism. In art forms where they lurk as cryptography in music we are happy to identify any mutually-supporting proofs. Thus it is a non-sequitur to say that every ascending F-major scale represents Frederick IIIrd's ascension to heaven. However, three repeated F's at the top, plus the title dedication or known intent of the piece, plus a drawing of Frederick up in the clouds, and the knowledge that this was accepted cultural practice at the time, leaves us in a much better position to see with more certainty the

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<sup>4</sup> J. S. Bach Kirchen Kantaten, Friedrich Smend, Christliche Zeitschriftenverlag ISBN Berlin 1966

symbolism that was intended.

Thus the pre-occupation with Trinitarian concepts in the Kyries of *Clavierübung Part III* is the unavoidable textual reference revealing strong Trinitarian elements. The “large” settings are momentous pieces of music where the first identifies "Kyrie eleison" with "Gott Vater in Ewigkeit" and puts the chorale in the upper part. The second, “Christe aller Welt Trost” places the chorale in the middle of the texture as a tenor part. The final “Kyrie, Gott Heiliger Geist” places its chorale melody deep down in the pedal part. Here we have Trinity symbolism at work in both a literary and musico-pictorial sense.

A clear basic symbolism is at work here. Where did it originate? One possible answer may be that, in the era immediately preceding Bach, the Protestant North suppressed theatrical activity, especially Opera and its derivatives. For his Leipzig position Bach was expressly forbidden, in his terms of contract article 7, to allow the music to become operatic:

"7. To the end that good order may prevail in those churches I should so arrange the music that it may not last too long, and also in such wise that it may not be operatic, but incite the hearers to devotion."

In the organ music of the Protestant North, however, there was a specially dramatic, almost romantic creativity applied in the 17<sup>th</sup> and early 18<sup>th</sup> centuries. It was as if one sense had been lost and another increased to compensate - like a blind person's improved perception through hearing and touch. One feature of this theatrical and dramatic organ style was identified as “*stylus phantasticus*” - a free, quasi-improvised, style of composing and playing which might be likened to fire and brimstone sermonising. One of my students traced some interesting links between the Italian *commedia dell'arte* and North German *stylus phantasticus* a few years ago. The outcome of all this was to invest organ music with a kind of responsibility to represent or symbolise, even bring the suppressed theatre right into the hallowed precincts of ecclesia. No wonder there grew up to be a common perception that, if ever the devil was going to enter the church it would be through the choir loft!

In the 18<sup>th</sup> century art of organ playing the practice of playing or improvising organ music to replace a hymn verse where the congregation remain silently listening was well cultivated or forms such as Chorale Fantasia were dedicated to use during communion. We know from contemporary accounts, as well as the music which has survived, that the highest examples of this art were expressly destined to interpret the theology and concepts of the relevant verse, using proper *Figur* and *Affekt*. And sometimes, it seems, numerology plays a part in the creative and symbolic process.

So it should be no surprise to us if we discover that major examples of organ music from this era, especially that of Bach, are impregnated with symbols and representations. Indeed it might be surprising if they were not.

### CLAVIERÜBUNG III

In investigating the Clavierübung part III, we cannot help but be struck by the consistent appearance of the number "3", which, according to numerology practices of the past two millennia was a symbol for Holiness or Trinity:

The Collection is the 3<sup>rd</sup> part of the 4 volumes of Clavierübung, the one linked expressly to the church by being organ music, the one which came fourth and was numbered third.

- \* The 27 pieces of the work represent a mathematical product:  $3 \times 3 \times 3$
- \* The prelude and fugue, its great supporting pillars, both have the key signature of E $\flat$  major, where three notes of the diatonic musical scale are altered.
- \* The prelude has three distinctive themes
- \* The fugue is what is technically known as a "triple" fugue.

The Prelude and Fugue form the alpha and omega, the two great supporting pillars of this collection of 27 pieces. Bach provides the Prelude with three themes: the first a majestic, dotted rhythm theme using both the *Affekt* and *Figur* of a French overture - a common form of music at the time. Such *Figuren* were used to represent Royalty or nobility in music of this or virtually any era since then. The second theme is structured in two parts - first, a chordal remnant of the original theme, modifying but maintaining regal associations but now adding echo effects; second, a syncopated and chromatic sequence reminiscent of the musical language Bach reserved for Passion and crucifixion subjects. The third theme is quickly-moving, it starts with a scale in octave descent, then moves around its lower note in an elaborated figuration.

At this point we might say that Bach was simply free to create some music in a single dimension which was interesting - even entertaining. Both Prelude and Fugue certainly achieve these qualities with ease and have become deservedly popular works. But when we view them in the second dimension as pieces of representational music we open the possibility for studying their musical language and interpret any underlying symbols.

Thus, the first theme can be seen as a representation of the might and nobility - "Royalty" - of God the Father.

The two parts of the second theme might represent the dual nature of God (in the

similarity of *Affekt* and *Figur* and the echoing, i.e. reproducing or making in its image, of the "Father" theme) and the second part of it betokening God made Man (the associations with the musical language of Passion and Crucifixion).

The third theme is a descent of one octave, recalling for us the *sphaera octava*, or octave of the spheres, which since ancient Greece, through the polymaths such as Henri Arnaut, the era of Newton, Viviani and Kepler, was a symbol for the relationship between the cosmic bodies, especially heaven and earth. The elaborated moving about in the lower tessitura is an ideal representation of the Holy Ghost on earth, also used by Bach in other contexts.

Not only do these themes provide most appropriate representations but they are introduced in the normal order of Father first, Son second, and Holy Ghost third. The Prelude is immediately followed by three pieces textually identified specifically with Father, Son and Holy Ghost, again in that order. These are followed by three smaller versions with identical titles in identical order.

The unusual choice of key for the Prelude - Bach's only free organ work in E $\flat$  major - invites attention. This key was normally out of the question for 18<sup>th</sup> century composers on account of the keyboard tempering and tuning practice of the day: its sub-dominant, A $\flat$  major, was a tense and out-of-tune key suitable only to provide *Affekten* of agony, but otherwise normally avoided. The beginning of "Thy rebuke has broken his heart" from Handel's *Messiah* is an example of the deliberate use of dissonant A $\flat$  major, colouring and interpreting the text. But the key signature of E $\flat$  major is a 3-symbol of its own accord for it indicates to the performer that three notes in each octave are to be read as flattened accidentals. Moreover the tension and dissonance from the A $\flat$  major tonality and beyond are specifically used in the second theme, second part, the one which seems to represent the human nature of Christ.

An interesting point of Biblical numerology also comes out in this "human" theme in that it has a most unusual ornament - technically termed an *appoggiatura*, a short grace-note used to add an *Affekt* of sighing, or longing - human attributes, passion attributes. The unusual thing about Bach's *appoggiatura* in this case is that instead of being the normally adjacent note, he writes one which leaps a fifth. According to Werckmeister in early 18<sup>th</sup> century, and Schmidt in *Biblische Mathematicus* of 1736 - just 3 years before the piece we are discussing was composed:

"5 is associated with weakness or Fall of Man".

So we can see in this Prelude a confluence of Biblical symbolism and other numerology,

Affektenlehre, Figurenlehre, and text associations, cryptography and the obvious intent of the succeeding pieces all mutually supporting Trinitarian concepts.

To help confirm this association we should also investigate the fugue - since Preludes and Fugues are normally coupled with each other, here they also form the extremities of a collection, then they might be expected to relate to each other. Bach chosen the same unusual key for the fugue - that coupled preludes fugues normally are in the same key is granted, although in this case there are 25 pieces of music separating them. More importantly, if we find no Trinitarian concepts expressed in the Fugue it will damage our case for a Trinitarian Prelude or indeed collection.

The similarity of the final fugue theme to the first line of the English Hymn "O God our help in ages past" traditionally sung to the tune "St. Ann", accounts for its nickname in English-speaking circles: the "St. Ann" fugue. There is absolutely no evidence that Bach knew this hymn. He did not appear to speak or read English. His son, Johann Christian Bach, did not even arrive in England until twelve years after Johann Sebastian's death. It has been pointed out that if the first two notes of the theme are reversed it yields the old German Chorale "Was Gott tut das ist wohlgetan". This would certainly be much more likely but is still not unproblematic. At any rate neither of the hymns has any specifically Trinitarian connotations.

Much has been published about this music, including Friedrich Smend's book J. S. Bach Kirchen Kantaten, and Melbourne organist and scholar John O'Donnells' article of 1976, "And yet they are not three fugues: but one fugue".

Smend notes that the fugue theme has exactly seven notes, then points out the re-occurrence here of the number 27: there are exactly 27 entries of this 7-note fugue theme. O'Donnell identifies a total of 189 "tacti", according to the old concepts of musical rhythmic order in Bach's day. 189 is 27 x 7. But of particular interest is the fact that these 189 tacti are arranged symmetrically as 72 in the first fugue, 45 in the second, and 72 again in the third, a proportion of 8:5:8. In any performance of the work this yields some interesting proportions:

$$\begin{aligned} [\text{Fugue II}]:[\text{Fugue I}] &= 5:8 \\ [\text{Fugue I}]:[\text{Fugue I+II}] &= [\text{Fugue III}]:[\text{Fugue II+III}] = 8:13 \\ [\text{Fugue I+II}]:[\text{Fugue I+II+III}] &= [\text{Fugue II+III}]:[\text{Fugue I+II+III}] = 13:21 \end{aligned}$$

Now the numbers 5,8,13,21 belong to a Fibonacci series out of which is derived the so-called "Golden Section" - thus not only satisfying both Werckmeister and Leibnitz on proportions and music being a branch of mathematics, but also conjuring up Kepler who

called this ratio the “sectio divina”, divine section. Here it can be seen as an expression not of equality in the Trinity, but perfection and the unique relationship among the three persons:

“For only by use of the Golden Section is it possible to portray the Son in the same relationship to the Father, of whom he is begotten, as the Holy Spirit is to the Father and the Son, from whom he proceeds”.

## CONCLUSION

Thus we see the mutual connection between prelude and fugue and their relationship with the whole collection is seeped in Trinitarianism. The Clavierübung part III, must be seen as a representation, not only of the commonly-held biblical beliefs and doctrines, clearly identified in its dedication as Catechism, but an expression of Church Life, with its Liturgical elements. There are further connections with world creation theory in the four duets, all presented in the context of the doctrine of the Trinity. In its own way it is perhaps a kind of christian cosmology. From this we may glean a possible explanation as to why Volume III was published after Volume IV, for a collection devoted to the Trinity could only be number III in a culture where symbolism and numerology was so important.

It would be tempting to speculate whether Bach, the Cantor and musical Pastor, preaching his own sermon on the Holy Trinity through this collection of music. If that was the case then Clavierübung III is using music, the handmaiden of religion, to explain this ancient concept in totally clear logical and precise mathematical terms. Certainly Bach’s music can be regarded as the culmination of the ancient quadrivium, where mathematics and music were part of the one set of related disciplines.

Eric, - in a moment I will do the great Wurlitzer race to the far end of the Great Hall and play this Prelude and Fugue. Our personal association and your support over many years has been one that has enriched my life and that of our mutual communities in many ways. It has produced three interdisciplinary symposia between our respective academic areas here at the University and Conservatorium, led to many pleasurable moments sailing, dining and living. In particular the religious and musical connections have been a mutual enhancement both socially and academically. Your humour is not forgotten: how could it be after I conducted a Bach Cantata with Eric as soloist then later being greeted in the local supermarket with a burst of his aria “Bestelle dein Haus”. It may be insider-trading to some extent but I know that the Prelude in E $\flat$  major was played at your wedding - so the opportunity to conclude today’s gathering with music, which we all know is of such importance to you, was natural and irresistible. Since I shall be playing both Prelude and Fugue today you might now be able to claim that the prelude was played at your wedding

to Birgitta and the Fugue at your divorce from the University.

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